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[SPECIAL OFFICIAL NOTICE.]

Bureau of Information, American Gas Institute.

DETROIT CITY GAS COMPANY,
ENGINEERING DEPARTMENT,
DETROIT, MICH., Nov. 26th, 1909.

To the Members, American Gas Institute: Send questions to be submitted to the Bureau of Information for answer to V. F. Dewey, Chairman, Gas Office Building, Detroit, Mich. The Bureau of Information respectfully solicits your troubles. Yours respectfully,

V. F. DEWEY, Chairman.

[OFFICIAL NOTICE.]

Annual Meeting, Indiana Gas Association.

INDIANA GAS ASSOCIATION,
OFFICE OF THE SECRETARY,
INDIANAPOLIS, IND., Dec. 30, 1909.

To the Members, Indiana Gas Association: The annual meeting of the Indiana Gas Association will be held in Indianapolis, the 19th and 20th insts. Details will be given later.

PHILMER EVES, Secretary.

[NOTICE.]

Annual Meeting, Illuminating Engineering Society.

The annual general meeting of the Illuminating Engineering Society will be held in the rooms of the Machinery Club, Terminal Building, 50 Church street, New York, the evening of Friday, the 14th inst. Dinner will be served promptly at 6:30 o'clock, after which there will be addresses, followed or preceded by routine matters pertinent to the meeting. The price per plate ($1) can be paid to any member of the Committee (Messrs. C. A. Littlefield, L. R. Hopton and E. L. Elliott) at that time. It is necessary to know in advance as to how many will be present, and the members are requested to signify their intention in this respect to the Committee. Send in this word at once.

[OFFICIAL NOTICE.]

January Meeting, New York Section Illuminating Engineering Society.

ILLUMINATING ENGINEERING SOCIETY, N. Y. SECTION,
OFFICE OF THE SECRETARY,
NEW YORK CITY, Dec. 31, 1909.

Gentlemen: The regular meeting of the New York Section of the Illuminating Engineering Society for the month of January will be held the evening of Thursday, the 20th, at 8:15 P.M., in the building of the Engineering Societies, 29 West 39th street. Kindly note that this meeting will be held on the third *Thursday* of the month, instead of the *second Thursday*, as is the usual custom. The papers of the evening will be on: "Bowling Alley Lighting," by Mr. Thomas W. Ralph; and "Selling Electric Light," by Mr. T. I. Jones. Both papers will probably be illustrated by stereopticon views.

Respectfully yours, A. J. MARSHALL, Secretary.

BRIEFLY TOLD.

MORE VISITATIONS ON THE METROPOLITAN GAS SUPPLIERS.—The writer has known Mayor Gaynor for many years - quite over 30—and while for much the greater part of that time, or since his elevation to the New York State Bench, their relations have been as if neither knew the other, it is nevertheless a fact that the writer has always had the greatest respect for him as a public man, and as to his *private life as well*. This respect is mainly based on the soundness of his public career, as viewed through the methods by which he arrived

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conclusions. Not only has he been a just expounder of the law, but he has as well been a careful administrator of material things that amounted in a value to that vastly beyond the fall of the ordinary man. Further, the writer had the fullest confidence that the Chief Executive of New York is absolutely unpurchasable. So, if fault may be found with him, the fault must lie in view of the belief that fair differences of opinion must exist over the personal quantity—in the making of appointments to certain public commissions that are prescribed by the charter. This reference has to do with the appointment of E. W. Bemis to the important position of Deputy for New York city, Department of Gas, Water and Electricity. We do not know how intimate is the personal relation between the Mayor and Bemis, but we do know that the former in selecting the latter has named in Bemis, a man, whose course, since his expatriation from the political economy division of the University of Chicago, has been that of a paid "expert" to harass the gas industry. It mattered little whether the settlement were large or small, republican or democratic, urban or suburban, Bemis, for *pay*, was always at the command of the agitators in and about public governments, to the harassing of the gas suppliers. His testimony, to the trained engineers, has continuously savored of the farcical, merely through his exhibition of non-technical knowledge, and through his frequent admissions that as a practical gas engineer he has never had training. In fact, he came to New York after a service as Superintendent of Water Works in Cleveland, O., during the now thoroughly discredited administration of Mayor Johnson—the Mayor certainly knew much about the latter in connection with the exploitation of the famous Nassau Electric Railway Cempany, of Brooklyn. With that scheme the Mayor could say much, so can the writer. The point in it all is this, if the Mayor wanted a Professor or a Doctor to occupy this important position, it would seem that he could easily have filled same by naming an engineer of local fame, whose chief recommendations or qualifications would not be thus of positive, active, unremitting hostility to an industry that he may in goodly portion be called upon to supervise.

SECOND ANNUAL MEETING, SOUTHERN GAS ASSOCIATION.—The Executive Committee of the Southern Gas Association (Messrs. A. W. Young, R. C. Congdon, James Ferrier and Morgan Morgans) have had several sessions held for the purpose of determining where and when the Second Annual Meeting of the Association was to be held. The ultimate result was the final naming of Chattanooga, Tenn., as the meeting place, which determination was well foreshadowed last year when Mr. A. B. Eilbeck, on behalf of the local Gas Company, asked the Association to commit itself to the Company's hospitality. The dates were set for the 16th, 17th and 18th of February. Much enthusiasm is in evidence over this meeting, and President Congdon and Secretary Ferrier are doing great work in the cause. It has been definitely determined that the main social feature shall be a banquet.

CURRENT MENTION.—

MR. O. B. TINKER, for quite a while in the employment of the Leominster (Mass.) Gas Light Company, has joined the force of the Worcester (Mass.) Gas Light Company.

THE new rate (98 cents per 1,000 cubic feet) scheduled by the Wilmington (Del.) Gas Company became effective the 1st inst. It is further stipulated that 1911 rate will be 95 cents, that for 1912, 90 cents.

"L. B. S." informs us that the Laclede Gas Light Company, of St. Louis, Mo., has about completed plans and specifications for a new coal gas plant up to a maximum daily output of 18,500,000 cubic feet.

"BROWN" forwards the following from Toronto, Canada, under date of the 4th inst.: "The Commercial Department of the Consumers Gas Company held a First Annual Banquet last week. The scene of the affair was in Williams', which proves to the full that everything was at the best. General Manager Hewitt presided, which is testimony to the effect that everything was carried along in smooth order. The session was enlivened by a number of excellently rendered vocal selections, and the between periods were leavened by several flights of oratory."

THE Holland (Mich.) Gas Company has taken up its business abode in the new Vischer block. And it is not a bit wide of the truth to say that no better appointed set of offices can be found in the city.

MR. HENRY L. COLEMAN, Manager of the Auburn (N. Y.) Gas Company, has been charged with the further duty of seeing to it that the coke is properly marketed. This makes him, to all intent and purpose, the Commercial Manager of the concern.

MR. CHARLES D. SLIMPIN has been appointed Manager of the Duquoin (Ills.) Gas Light, Heat and Power Company. He was formerly on the staff of the Elgin American Gas Company.

"L.," WRITING from Cincinnati, O., under date of the 5th inst., says: "It is a trifle early to decipher what those portents mean, but it is a fact that Mr. Eugene Mackay has been elected President of the Kansas (Natural) Gas Company, succeeding Mr. T. N. Barnesdall, resigned—pressure of other business is given as the inciting cause. He remains, however, as Chairman of the Board of Directors. Mr. J. C. McDowell also resigned the position of General Manager to the Company, his successor is Mr. A. B. Macbeth, of Kansas City. On the face of it one cannot help thinking that here again is shown the fine, old American hand of the presiding genius of the U. G. I. Co."

MR. PAUL BERTKE, formerly Superintendent of the Pueblo (Col.) Gas and Electric Company, has been appointed Superintendent of the Spokane (Wash.) Gas Company.

IN addition to the regular quarterly dividends on the shares of the American Light and Traction Company, an extra dividend of 2½ shares of common stock on each 100 shares of such stock now outstanding.

Reviews of Odds and Ends.

The H. Mueller Manufacturing Company, of Decatur, Ills., is out with Another of its Sensible, to-the-point Publications.—Although compared with the mammoth "General Book" of some time ago, nevertheless the present tome is a very complete catalogue, fully illustrated with the almost innumerable number of tools for use in connection with the installation and repairs to gas and water mains, services, etc. Mentioned as "Practical Tools," and undoubtedly they must be, were one to take as his guide the huge establishment in Decatur that turns them out by the thousand yearly, and which bids fair to cover acres-upon-acres more than it covers at the beginning of 1910.

"*Retort House Governors.*"—The Gas Machinery Company, of Cleveland, O.—This is the subject of the latest of three valuable serial publications, and it goes without saying that the editors and compilers have done their work well. The illustrations, text and general get up of the "Bulletin" are irreproachable.

"*Dumping Tubs and Grab Buckets.*"—The C. W. Hunt Company, 45 Broadway, New York city.—This is a short but profusely illustrated, 16-page catalogue, No. 096, showing a large number of appliances for handling coal, stone and similar materials encountered in and about large works of all sorts. One of the cuts showing the methods of 1875, is in strange contrast with the almost human movements of the 1910 apparatus.

"*Recording Gauges.*"—By the Bristol Company, Waterbury, Conn.—This is the Company's "Bulletin," No. 114, and it could well be called a catalogue, so replete it is with descriptive matter concerning both the apparatus and the various charts going therewith.

"*The Prevention of Industrial Accidents,*" is the title of a well put together volume, for which the management of "The Fidelity and Casualty Company," New York city, is responsible. It is a pocket edition, containing nearly 200 pages of various suggestions and dont's. The matter should be of interest to both the engineer and manager; in fact, the commercial man might take a hint from some matter-of-fact introductory remarks concerning insufficient artificial illumination.

A Very Handsome Catalogue indeed is that which was put out the first of the year, by the Central Foundry Company, of New York city, the same being mainly devoted to "Universal Cast Iron Pipe." It well, yes admirably shows various applications of this special jointed pipe. It is also worthy of note that they will be represented hereafter by Mr. E. E. Witherby, whose business announcement card appears in this issue.

"*Metallic Flame Electric Arc Lamps.*"—Westinghouse Electric and Manufacturing Company, Pittsburgh, Pa.—In this the paper entitled "Recent Types of Arc Lamps and Their Operation," presented to and read by Mr. C. E. Stephens, at the last annual meeting of the National Electric Light Association, has been reprinted in "Bulletin" form—No. 1506. The author has attempted to show the superiority of this over the inclosed type, but the unsteadiness which has been the greatest drawback to the metallic flame lamp naturally receives no mention.

An Historical Group.

Herewith is a photograph of an assemblage of The Society of Gas Lighting, taken we believe in the year 1879 in the garden that formed a part of the plotting out of the grounds of the Mutual Gas Light Company, of the City of New York. It is a notable picture, and a scanning thereof recalls the stern fact that within the 22 years of its existence five of those portrayed have journeyed to the end. And noble men they all were. Of the fatal roster first comes the name of Dr. A. W. Wilkinson, easily the ranking dean of his time in American gas chemistry, of The New York Mutual Gas Light Company. Then of bluff, hearty, true and staunch Joseph Russell Thomas, Chief Engineer of the Williamsburgh (Brooklyn, N. Y.) Gas Company. Of A. B. Slater, the precise soldierly and accurate Engineer of the Providence (R. I.) Gas Company. Of genial, retiring, sweet-mannered William H. Coombe, Superintendent of the East Station, Manhattan Gas Company, N. Y. Of whole-souled, brilliant, lovable "Harry" A. Allen, ranking Engineer of the Mutual Gas Light Company, of the City of New York. Of Henry B. Leach, whose sturdy manhood was well in tune with the times in which he lived and labored. These men were engineers in truth and deed.

LEFT TO RIGHT.

Sitting.—Prof. A. W. Wilkinson, A. M. Smith, W. H. Bradley, Jos. R. Thomas, F. S. Benson, A. B. Slater, Wm. H. Coombe, F. H. Sherman
Standing.—Henry A. Allen, W. R. Beal, H. B. Leach, Dudley D. Flemming, A. H. Strecker, Dr. E. G. Love, Jno. S. Bush.

Styles of Window Lights.

By "Inspector."

The illustrations herewith show some of the styles of windows designed especially for use in connection with window lights. Window lights have, of course, been in service since the beginning of the use of illumination; but under ordinary circumstances window lights have not been made such especial features as they have been made in the present time. In the old days if certain illumination shone through certain window glass, and so illuminated the frontage of the building, it was all right, and the conditions were usually allowed to prevail; but in this age illuminating engineers are engaged in producing the window lights with a view of effectively illuminating the exterior of buildings as well as producing a striking effect in the window itself.

While at first the window lighting combination chiefly involved colored window panes, reflecting contrivances, and various other devices, at present the window light schemes involve most elaborate and costly arrangements. Some of the most effective and bizarre window lighting means are arranged for the illumination of arches to entrances of drives. Again there are illuminated towers for housetops. In Fig. 1, for illustration, the object is to get an illumination through the arch at the top of the gate at the entrance to an estate. The arch is built up of costly material, and the finish is stable, while the plate glass front is of the bevelled aod heavy description. Then, too, there are bronze cross bars and trimmings. The structure was designed solely with a view of utilizing illumination in connection with it.

In Fig. 2 may be seen another pattern of window, of the imperial order, constructed with the thought of having brilliant lights shining in the back of the same. Of course, such a window is not calculated for the practical service of the common sash window which can be raised and lowered at will. In fact the imperial type is made of stock that requires stability. Hence it is of the "fixed" window class.

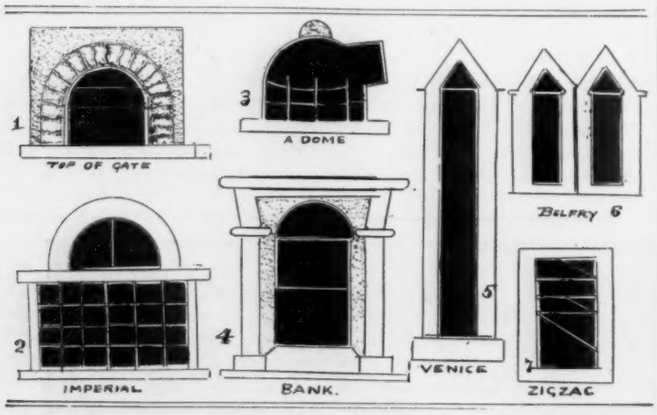
Dome windows are getting to be useful, also common. This style of window is usually arranged on the side of the building some distance up from the ground, although often the lighted dome window is on top of the roof. The desire of some persons to have lights fixed to the roofs of their houses led the illuminating engineers to design dome windows. The dome window usually requires the use of oval and curved shapes of glass, and often the glass is frosted, and with the obtaining of unique effects. The house or other building possessing the dome light is a marked object to persons travelling from a distance. While in a city or town the dome light is often obstructed by adjoining buildings, in the country districts the dome lights shine forth from the roof tops, acting as guides to travellers on the country road for miles distant.

Since it has become the custom for the banks to install lights to burn all night, the illuminated bank window, Fig. 4, is common. Burglars have no particular fancy for this sort of illumination. The bank, the lighted portion exhibiting strong vaults, powerful time clocks, etc., is naturally discouraging to bank looters.

The ingeniously adjusted bank window is so lighted that the intending robber gang can observe all the burglar proof devices and

alarms through the illuminated windows. Without a doubt the illuminated bank window has saved many a bank from looting. A Venice style of window is shown in Fig. 5, the object of which pattern is to enable the designer to install a narrow strip of illuminated window in places about a building where there is not very much space to spare. The narrow margin of the window of this type makes it possible to find a position almost anywhere about the premises. The belfrey style of illuminated window is shown in Fig. 6.

There are often demands for windows for illuminating uses, with the zigzag style of sash shown in Fig. 7. The frame is usually metal in cases of this kind.



Since the building of automobile garages has become so common throughout the country, there has been quite a demand for lighted styles of windows. The light, of course, is adjusted to attract observation and at the same time furnish light for the entrance to the garage.

[Continued from Page 11.]

REPORT OF PROCEEDINGS, FOURTH ANNUAL MEETING, AMERICAN GAS INSTITUTE.

Held in the Hall of Elks, Detroit, Mich., October 20, 21 and 22, 1909.

First Day—Morning Session.

REPORT FROM COMMITTEE ON BENZOL ENRICHMENT.—*Continued.*

Chester Operation.—At Chester, Pa., the Suburban Gas Company operates water gas plant and by-product coke oven plant. The coke oven plant is situated about 1¼ miles from the water gas plant, so that the coke oven gas has that travel before being mixed with the water gas. At the present time all of the gas evolved from the coal charged to the ovens is turned over for distribution to the consumers, the gas required for heating the oven flues being derived from an independent producer installation. This method of operation, together with the general system of oven charging employed, is productive of widely varying results from the standpoint of quality of gas received. As an illustration of this point, the candle power will vary from 17 immediately after charging to 1-candle power toward the end of the coking period, the heating values varying approximately between the limits of 650 B.T.U. to 550 B.T.U. per cubic foot. This fact will in itself, I believe, explain some of the variable results obtained with benzol enrichment. Another feature in the operation is the presence of water gas in varying proportions in the mixture to be enriched.

The gas from the coke ovens, after its travel through a 10-inch main 1¼ miles long, is metered ahead of the purifying boxes and before being mixed with the water gas. The two gases are mixed in the boxes. The candle power of the water gas, when same is to be mixed with the coke oven gas, is carried at approximately 20. This value was determined upon after experimentation as being the best economic benzol results on the mixed gas. Attempts to carry it below 18-candle power gave very poor results. This value (20) allows for 1 or 2 candles enrichment from the water gas, the same depending on the ratio of the mixture which in turn determines the candle power to be delivered to the consumers. We have had no considerable amount of experience with benzol enrichment on straight water gas, except in the months of April and May, 1908, during which time we obtained an average of 21.900-candle feet per gallon benzol. The process was discontinued, however, on account of the poor carrying qualities of the water gas so treated.

To return to the original description. After being mixed in the boxes the gas is enriched with benzol. The carburetter used is a simple type, the oil being vaporized by steam.

Candle power readings are taken hourly on the gases before and after enrichment. The finished candle power is read directly from the line at the outlet of the governors. This allows for a certain amount of condensation between the carburetter and this point, the major portion probably taking place in the holder inlet pipe and the commercial holder itself. It is a very noticeable fact that enriching values vary considerably, due to this phase of the operation. During the winter months a considerable amount of condensate gathers on top of the water in the holder tank, which vaporizes during the warmer weather and practically automatically enriches the gas. This means that after enrichment there are present in the gas certain hydrocarbon vapors of such low tension that condensation of same takes place when the gas is chilled in the holder, this condensate revaporizing when the temperature of the gas increases to the proper point for such action to take place. At the time of writing we are experiencing a condition of higher candle power on the end of a 9-mile high pressure system than at the holder station. The gas being pumped is 100 per cent. coke oven gas, where, up to a month ago, it was a mixed gas. This condition can be explained in the same way. A comparison of drip oil tests will tend to corroborate this statement, some of the higher tension oils having been condensed in pockets along the line during the winter months. It is quite likely that the coal gas contains a less per cent. of candle power due to benzol and more to fixed gases, and for that reason is better able to absorb a greater proportion of the oils in the line than was possible with water gas. The table and curves give a survey of the operation for the past 6 months.

Looking at February and March it will be noticed that the enriching values for these months are identical, as well as the atmospheric temperatures. The carrying capacity of the gas, however, was increased. This may have been due to two causes: First, a decrease in per cent. of water gas in the mixture; second, the use of a higher grade benzol (about 82 per cent. against 78 per cent.).

With April the enriching value per gallon jumped to a high figure, namely 34.100. With this there was an increase of 12° F. in atmospheric temperature for the month. There was also a further decrease in per cent. of water gas in the mixture. The average benzol consumption per day was less than either February or March, along with lower initial candle power values, showing that some of the condensate collected in the holder was being revaporized and enriching the gas. Note also the increased carrying capacity under high pressure.

For May a still higher value was realized, this with an increase of 11° F. in atmospheric temperature and a slight increase in the per cent. of water gas in the mixture, over the previous month. In June the water gas in the mixture exceeded the coke oven gas, the results showing a decrease in enriching value.

The figures for July show an enriching value of 30.100-candle feet per gallon, under conditions which closely approximated the operating conditions of the previous month.

C. Rodman Stull.

Month.	Temp. Air.	Candle Power W. G.	C. O.	M'x'd.	Candle Feet.	Darby C. P.	Drop.	Remarks.
Feb ...	38	20.0	7.6	17.3	18.900	12.7	5.6	.....
Mar	38	20.2	8.1	16.9	18,900	15.2	1.7	Less W. G. than in Feb. Better grade L. O.
Apr	50	19.0	7.0	16.8	34.100	16.1	.7	Less W. G. than March. Note increase in air temperature.
May....	61	20.1	8.0	16.8	52.500	16.1	.7	.....
June....	71	20.8	6.5	19.0	27.600	15.2	3.8	Excess W. G. over C.G.
July....	74	19.8	6.5	19.0	30.100	17.1	1.9	.....

H. P. Drip Oil Test.	February.	August.	Heating Values W. G.	In C.G.	En. Mixed.
Up to 202°	36.5 per cent.	.6 per cent.	619	575	602
202—212°	60.0 "	4.0 "	...	...	...
215—260°	93.0 "	41.5 "	...	...	...
260—302°	97.0 "	70.0 "	...	...	...

Discussion.

The President—You have heard the Report of the Committee on Benzol Enrichment. What action will you take?

On motion it was ordered received.

The President—Does anyone desire to discuss the report or to ask any questions?

Mr. C. H. Graf—I have heard some comment made as to the effect of benzol on meters. I should like to hear from Mr. Shattuck in regard to that.

Mr. Shattuck—I have used benzol enrichment for 3 years, and never found any indication that it was affecting the meter diaphragms in any way.

Mr. R. B. Brown—Answering further, I will say that, at Milwaukee, we have used benzol enrichment for several years. We found, first, before we understood how to use benzol to the best advantage, that heavy hydrocarbon vapors of the lower tension series were deposited to some extent upon the valve seats in the meters, and had a great deal of trouble from sticky valve seats. Since the results of the more thorough investigation of the best methods of using benzol have become known and applied, we are getting rid of a large portion of the heavy oil vapors in the gas before the benzol is introduced. We do not find such troubles any longer, and have never had any trouble with the diaphragms.

The President—Next on the programme is the

REPORT OF THE BUREAU OF INFORMATION,

which was read by Mr. W. A. Baehr (Chairman) as follows:

The Bureau of Information submits the following report upon the work accomplished during the year 1909.

Up to the time of the meeting of the American Gas Institute, in the fall of 1908, 39 questions had been submitted to the Bureau of Information, all of which were disposed of with the exception of questions Nos 10, 25, 29, 36, 37, 38, 40 and 41. These questions were carried over into the work of this year, and, in addition to the date of writing this report, the list of questions was augmented from No. 42 to and including No. 56.

The Bureau of Information for the year 1909, as approved by the Technical Committee, was as follows:

W. A. Baehr,	V. F. Dewey,	A. B. Macbeth,
H. C. Abell,	H. L. Doherty,	H. L. Rice,
W. S. Blauvelt,	A. H. Elliott,	J. M. Rusby,
C. O. Bond,	J. H. Eustace,	R. M. Searle,
C. F. Burgess,	W. C. Morris,	J. D. Shattuck,
R. C. Cornish,	T. D. Miller,	Geo. H. Waring.

A large membership of the Bureau was provided in order to make the burden on the individual member as light as possible. To make the scope of the Bureau as far-reaching as possible, its personnel was selected so as not only to cover the country geographically, but also to secure the names of men versed in all phases of the business, and to cover syndicates, large companies, and small companies as well. The work this year was carried on in much the same manner as last year. The method of handling the same was as follows:

Each accepted question submitted to the Bureau was assigned to some member of the Bureau to answer. This individual member of the Bureau, after receiving the question and making up an answer thereto, either from information at hand or as the result of experiments thereon, mailed a copy of the question and answer to each of the other members of the Bureau, including the Chairman. Each individual member, upon receipt of the same, made such comments as he deemed necessary, all such comments being forwarded to the Chairman. The Chairman thereupon compiled the official answer for the Bureau from the data obtained from the original answer, together with the comments on the same. In order to carry on the work as expeditiously as possible, the Chairman undertook to pass upon the questions submitted, as to their necessary qualifications, for the admission to this work

By vote of the Directors last year, it was decided that only those questions should be accepted by the Bureau which were submitted by a member of the American Gas Institute. In addition to this, it has been the original policy of the Bureau that no question should be answered which is of an advertising nature, or which would fall within the province of the consulting engineer, or which, for various reasons, such as policy, etc., were deemed as not being proper questions to answer. During the year several questions were received which came under the above category. No numbers were assigned to these rejected questions, nor was any record kept of the same, inasmuch as they would only constitute mere "lumber" in the proceedings of the Institute.

The Board of Directors also passed the following resolution at the meeting in New York just prior to the October, 1908, meeting of the American Gas Institute: "Neither the Board of Directors of the Institute, nor the Institute as a body, make themselves in any way responsible for the statement of fact or expressions of view given out by the Bureau of Information."

It was the intention of the Chairman to submit any questions upon which he had the slightest doubt, as to the necessary qualifications for admission to this work, to the majority vote of the Bureau. This contingency, however, arose very infrequently.

As soon as an accepted question had been assigned, a copy of the same was mailed to each member of the Bureau, also to the Gas Journals, for publication. The idea of this was, that any one in the gas business, or interested in the gas business, might submit any answer-at large to any questions which appeared in the Journals. Inasmuch as it is universally recognized that a great many members of the fraternity-at-large have information in their possession, which is not generally known, and which, if contributed as an answer at-large, would form a valuable addition to the literature on the subject, the Bureau had hoped that considerable interest might be taken in the work, and that many answers from this source might be submitted. As an incentive for anyone in the gas fraternity to submit answers-at-large, the names of the individual submitting such were published. From the report of the work of the Bureau herewith submitted, it can be seen that this interest has been considerable, and the Bureau hereby wishes to express its thanks to the gentlemen who have contributed such answers.

When the Bureau made up its final answer to the question, it forwarded this answer, together with any answers-at-large which might have been received, to the Gas Journals, and these were duly published.

In order that the work could be carried on successfully, it was necessary to count on the co-operation of the Journals in publishing questions and answers as they were received, and other notices pertaining to the work. The Bureau wishes to extend its thanks to the Gas Journals for their valuable and hearty co-operation in the work.

Upon looking over the following report it can be seen that a great many questions were of such a nature as to require considerable experimental work in order that an answer might be compiled. The Bureau wishes to report that considerable such experimental work has been done in making up some of the answers, and a great deal of credit is due to the gentlemen who undertook the same. It might be added that the individual members of the Bureau of Information have done a great deal more work in connection with this portion of the activity of the American Gas Institute than would appear from a mere inspection and reading of the report. It is easy to submit questions which require a great deal of study and work to answer, and it was for this reason that the membership of the Bureau was increased to 18 members. This was necessary in order to prevent any one member from being over-burdened with work.

During the year it was suggested by a member of the Bureau that the answers as finally submitted by the Bureau of Information, be printed as a part of "The Bulletin of Abstracts," properly classified, to go in with the regular classification of these Abstracts.

The above matter was referred to Mr. R. B. Brown, Chairman of Technical Committee, and upon his advice it was submitted to the majority vote of the Bureau. From the replies which were received from the individual members of the Bureau, only three were in favor of the above proposition. Since the majority of the members of the Bureau were opposed to the above plan it was decided to let the matter drop.

In conclusion the Bureau wishes to thank the fraternity for the interest shown and assistance given in this work, and begs to herewith formally submit this report. Respectfully submitted,

W. A. Baehr,	J. H. Eustace,
H. C. Abell,	W. C. Morris,
W. S. Blauvelt,	T. D. Miller,
C. O. Bond,	A. B. Macbeth.
C. F. Burgess,	H. L. Rice,
R. C. Cornish,	J. M. Rusby,
V. F. Dewey,	R. M. Searle,
H. L. Doherty,	J. D. Shattuck,
A. H. Elliott,	G. H. Waring.

[The questions and answers having been published in the American Gas Light Journal, as received form time-to-time from the Bureau, there is no need to reproduce them here. It is in order, however, to add that these will be republished seriatim in the "Proceedings" of the Institute.—Eds.]

(To be Continued.)

[Concluded from Page 14.]

PROCEEDINGS, SEVENTEENTH ANNUAL CONVENTION OF THE PACIFIC COAST GAS ASSOCIATION.

Held in San Francisco, Cal., Sept. 21, 22 and 23.

Second Day—Afternoon Session.

EXPERIENCES.—*Continued.*

Novel Method for Cleaning Services.—A company in which I became indirectly interested some time ago had the most efficient method for cleaning out its service pipes that I ever saw.

It seems that for some years they had been troubled with that partial stoppage of the pipes which is so familiar to the gas man, and which is commonly but ineffectually remedied by repeated blasts from the bell service pump, until, in disgust, the service is ripped up and replaced or cleaned out. In this particular the company had, step-by-step, raised the pressure on its mains in order to overcome the difficulty, until finally it had reached a pressure of 37 inches. It was then some obscure genius suggested that steam be used to blow out the services, and that steam automobiles be used for the purpose. It may be stated right here that there was a rival company in town, which was, luckily for company number one, suffering under the same difficulty of plugged services, and it was this happy suggestion for cleaning out the pipes that gave our company a most timely and advantageous lead over its competitors.

When the automobile was first installed, the plan was to go about from place to place where there was trouble, connect a steam hose between the boiler of the auto and the standpipe, drive the pressure up to 400 pounds, and turn her loose. This drastic remedy was most effectual, but it was soon thought to be too much of a strain upon all things concerned, and was superseded by the following method: An ordinary 30-gallon residence water boiler was carried about on the automobile, and when occasion for clearing a service arose this boiler was charged from that of the automobile to a pressure of 150 pounds. This was connected to the standpipe by a short hose and turned into the service. We have since reverted to our original plan, and find that the scheme works to perfection, and more than pays for itself, as 2 men with 1 automobile now do the work formerly done by 8 men and 4 wagons, and we now have the experience of clean pipes.

Not a Municipal Plant but.—The following is unique in its way, going to show the versatility of the gas man when demand calls for quick action:

The City Fire Department has an enviable record for its work of extinguishing fires, and the members of the Department are noted for their ability to handle fires successfully and put them out. Yesterday the Department, or a portion of it, was pressed into service for the purpose of making fires, and by the efforts of the firemen hundreds of fires were started in various parts of the city.

It took the combined work of one of the Department's big steamers and half-a-dozen men to put the Gas Company in position to supply its patrons yesterday morning. About 7 o'clock the gas all over the city stopped flowing, and as a result many a breakfast was abandoned.

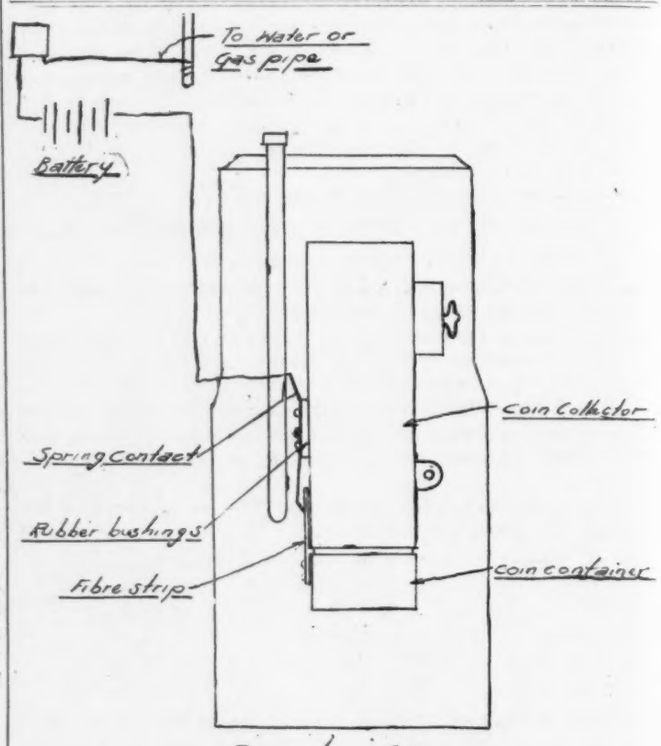
The crew at the gas house and the superintendent were baffled for a time, but finally discovered that the supply pipes leading to and from the bottom of the huge gas reservoir had become clogged with tar and other material and, as the second gas receiver had been emptied for repairs, there was no chance for a supply. There was over 20,000 cubic feet of gas in the big tank, but not an inch was going out into the pipes. Complaints were coming in from hundreds of kitchens and the telephone bells in the offices of the company were nearly worn out.

Finally the happy thought of pressing the Fire Department into service presented itself, and a steamer manned by five men was put to work. Steam was forced into the pipes and the obstruction released. By 1:30 gas was again shooting through the mains and the belated breakfasts were being enjoyed.

It is needless to say that the fireboys were suitably rewarded for their prompt and efficient work.

Catching the Prepayment Meter Thief Made Easy.—That electric energy is used for many and divers purposes, other than for power, lighting, telegraph and telephone, goes without saying. Even the gas man sometimes calls upon this hidden agency to help him; but 'tis a bright mind that conceived the idea of using the juice to catch a burglar, and a still brighter thought to use this same subtle power to trap the festive prepayment meter thief. Here is the way one of our members puts it:

For some time we were troubled by thieves robbing a few of our prepayment meters, and doing it in such a way that we had reason to suspect an employee. We had the suspected man watched, and even baited a meter with marked coin, but failed to catch him at his nefarious work. It was at this time we conceived the idea of calling upon the unseen electric power to aid us in solving our difficult problem. We had the alarm, as shown by the illustration, attached



Burglar Alarm

to a prepayment meter which was alluringly located and, securing a convenient room, were prepared to receive our unwelcome visitor should he see fit to seek an involuntary contribution from us. This meter had been robbed twice before, each time a day or so previous to the date for reading the meters. We now felt prepared, and anxiously awaited results. My confidant, when coming home on the theater train, noticed our suspect on the same train, and as soon as possible telephoned me to be on the lookout. At 3 o'clock in the morning the burglar alarm was sounded. I went to the front door, and, firing a shot in the air, commanded the burglar to halt, but he took a chance at escape and fled over the back fence. A police officer, my friend and myself made a search of the town, but failed to find our man. We reasoned that he would want to get back to San Francisco where his home was. So we took the early morning train, and at one of the stopping places our man also got on. I talked with him, and pleading that I was out of money, asked for a small loan. The man gave me a couple of quarters, one of which bore the mark that had been placed on the decoy coin in the meter. It was necessary to use a revolver to take the man from the train. The officer was notified and drove up to get the prisoner, who was placed in jail. He was later taken to the county jail to await a preliminary hearing.

For two years the man had been in the employ of the company and was thoroughly trusted up to the time when the robberies began. The amount secured by him since he began operations was from $50 to $75. Unfortunately for him he changed several of the marked coins for larger pieces at a saloon and was thus easily identified. This surely was an exciting experience, and one never to be forgotten.

A Case for Equity.—A few years ago I assumed the managership of a plant in a city of about 40,000, and shortly after taking hold had

an experience that is perhaps worth relating. One day a gentleman walked into the office, giving his address, requested that a meter be set at his residence. Familiar, as we thought we were, with the piping of the city, we informed the gentleman that, in order to reach his house, it would be necessary to lay over ½ block of main in addition to service, and that he would have to stand a share of the expense in accordance with the policy of the company. The gentleman protested that we were wrong, that his next door neighbor used gas for cooking, and had done so for years. I called the statement taker, and he assured the applicant that there were no meters in that half of the block; then I brought in the all-round man, who knew the city by heart, and he, too, declared that the mains did not cover that locality. However, the insistence of the man suggested to us that there must be a rat in the cellar somewhere, and we decided to investigate. Accordingly I set out with the all-round man to investigate, and sure enough, in the basement of the house next to our applicant's, we found a service pipe, a 3-light meter, and a stove run, with the gas flowing freely. We returned to the office to look the matter up.

Some years back, the office had made use of a peculiarly loose system of bookkeeping, which consisted of a daybook in which all transactions were entered, such as sales, new customers, complaints, etc.; from this book the complaint men and meter setters took their orders, and each item was transcribed according to its category. Through this daybook we began a tedious search, going back over items extending 5 years, and at last we came upon the entry, "Set meter, Mr. So and So, such and such an address." There was the order, plain as day, but Mr. So and So's name had never appeared elsewhere on our books, nor had any record been kept of the meter, or the laying of the pipe.

How to proceed was the question. We had, of course, read the meter, and found that it made at least one complete circuit of the dials, and considerably more; but aside from this was the fact that during the time the meter had been in, three separates had prevailed. What, anyhow, were our legal rights?

Taking the bull by the horns, we made out a bill, averaging up the rate and, figuring the total according to the reading of the meter, assuming that one complete circuit of the 100,000 dial had been made. The result we considered entirely equitable; it amounted to something like $125; but would the victim pay the bill? That was the question. However, we presented it to him as if it were the simplest matter in the world, and to our surprise, instead of a scene following as we fully expected, the long lost blandly drew up his check for the amount and handed it over, then calmly informed us that ever since the installment of the meter he had read it himself and deposited an amount equal to the bill in the bank, on interest. I never did have the nerve to ask him how much that bill really amounted to.

What's the Use of Collectors?—The gas man, wandering in a strange city, drew up to the office of the enterprising concern engaged in the manufacture of the indispensable boon to humanity. "Truly," he thought, "this firm employs a great number of office boys. Or is it that the clerks, and even the head man, perhaps, and the gas sachems themselves, have developed an extraordinary love for hot dogs, pop corn and peanuts? What, otherwise, can be the explanation of this strange phenomenon which I behold?" And so the wanderer strolled into the place where scribes are employed to compute the tributes to be levied upon the people, and he was met by a strange odor of garlic which seemed to proceed from a motley company of swarthy men gathered about a desk. Each of the men held in his hand what was surely a meter such as is used to measure gas, and they strived for a position at the desk, where an individual with the astute countenance of a gas merchant most certainly took note of the dial of each meter, spoke in words of apology or commiseration to the holder thereof, and relieved said persons of divers sheckels of money. And as each transaction was completed, out walked man with meter, and the wandering, wondering stranger saw through the plate glass window how those who went forth placed their meters in glass top push carts and sandwich wagons and trundled away.

The stranger saw before him a door, and on the door was written "Manager," so he went into the place where the great man sat, and mentioned a name famous in the councils of the gas men, and said, "Tell me what were the strange sights which I just beheld," and this was the tale told by the great man:

"We have a custom here which was inaugurated for the benefit of all the street corner merchants, those who go about with carts, and sell peanuts and popcorn, wienerwurst, sandwiches, and hot lunches to famishing multitudes. At the favorite corners of these men we have standpipes with padlock stopcocks, and to those who stand upon these corners and sell are given keys, a key to each for his favorite corner. The dispenser of eatables pushes up to his accustomed place, hitches a hose, with a meter attached to the cock; and behold! He is supplied with fuel and light to his heart's desire, much to the disgruntlement of John D. Rockefeller and the profit of the gas company."

"Great!" Commented the stranger. "Truly an ingenious scheme!"

"But look you," said the obliging manager, "Is not this the best feature of the arrangement? Each month, at a given date, the consumer carts his meter to the company's office to be read."

"Ah!" exclaimed the stranger, "And that is the explanation of that great gathering of peanut and frankfurter wagons which I saw at your curb!"

Buried Treasure.—Here is an experience I had when I took over the plant in the town of ————, Cal. If it is half as interesting in the narration as in the happening, it is worth while. The plant, when I took it, was an oil process, having been changed over, some little time before, from a water gas set. I found that the entire works needed overhauling, because of incapacity and various other reasons, and set about the work with vigor. We had proceeded for several days when some of the men who were engaged in prospecting for a foundation came across an obstruction that seemed a tremendous tank of some kind or other. With considerable curiosity we investigated the matter, and, after a great deal of digging, uncovered an iron shell 5 feet in diameter by 20 in length, filled with a viscous coal tar. No one about the works was able to give any information as to how the tank came to be there, but I was informed by the oldest employee on the place that a number of years before the plant had been converted from a coal set to a water gas set, from which it had later been changed into an oil process. At any rate I had discovered a small gold mine, for, aside from the coal tar, the tank was in perfect condition, and I later stood it up on end and made use of it as a generator shell.

It was some time after that I learned the true history of the buried tank. Twenty years before the works had been inaugurated as a gasolene process, and at that time the tank had been placed in the ground to serve as storage tank for the gasolene. In this capacity it served until the plant was converted to a coal set, when it began to serve as a receptacle for tar. Upon the conversion to the water process the tank was abandoned and soon forgotten, and there it lay, safe from decomposition, in its tar saturated bed.

Wanted, a Competitive Plant.—The modest gas man, wandering in a strange land, unheralded and unhonored, came to a thriving valley town of perhaps some 5,000 inhabitants. It was a beautiful place, and always before in his wanderings the gas man had found the smile of contentment on the faces of the townsfolk, but something now was surely wrong. The people on the streets went listlessly about, and dejection betrayed itself on their countenances. There was an unusual number of women to be seen, and all of them wore the fagged look of sleepless watchers by a bedside. Yes, something surely wrong, but what? Prompted by a feeling that forbade him to inquire into the woes of strangers, the visitor forbore to ask of those, who stood forlornly about the cigar stands, what was the cause of this strange sadness painted on the faces of the inhabitants; but when the meal hour approached, and hunger usurped the place of curiosity, he boarded a street car that would land him at the door of a lovable old gossip, his great aunt, for he knew that here he would get a hearty welcome and a meal fit for the captain of industry that he was—yes, and perhaps find an explanation of all that had caused him so much wonder. The great aunt met him with open arms, but behold, she too seemed careworn and concerned; but, most surprising and alarming of all, no savory odor of a good, old, home-cooked meal saluted his yearning sense. "Aunt," he exclaimed, "What is the meaning of all this? To-day I walked the streets of the town, and every inhabitant, man, woman and child, appeared to have lost his last friend. I come out here to you, and you, too, are as doleful as a funeral. What is the cause of it all?

"Cause enough!" moaned the aunt. "Hasn't the gas company shut off the gas from the whole blessed town? And hasn't it been off now for two everlasting days?"

The visitor partook of a cold but bounteous meal, and later betook

himself to bed; but early the next morning he was off to learn the reason for it all. He had not far to go. A short distance down the street a ditch was open and a gang of men were at work. A gas wagon stood near by. The stranger watched and saw that the men were cleaning the main, unscrewing each length and forcing a swab through it.

"Cleaning the main, I see," he astutely remarked to the foreman.

"Yep," answered that individual.

"Have to turn off the whole town to do it?"

"Yep; has to be done."

"When will you get through?"

"Oh, we'll get through this morning all right."

The visitor went thoughtfully on his way, and in comparison with this criminal indifferences of a sure monopoly he recalled the method he had seen pursued by a better managed plan in another town of equal size. In this town the mains throughout the system had become partially plugged after long use, and were cleaned by making successive by-passes of 300 feet, cutting off the services in the section, after timely notices to the customers, and then cutting the 300 feet into 100-foot segments, through which were forced inch pipes with boiler iron disks on the end. The stranger saw the moral and was glad.

Experience Does Not Always Teach.—Having neglected to pay my gas bill, I had, for the first time in my life, the novel experience of realizing what it means to the average man to take a step backward and have his gas supply shut off. While I was in many ways inconvenienced, there is no comparison between what I had to put up with and what my wife, who constantly uses it, had to contend with. I have, during the many years I was connected with the gas companies, been compelled to shut off the gas on others for the same reasons, and have heard the lady of the house plead for an extension of time, until such time as the husband could go to the office and pay or receive his salary for the week or month, or claim sickness and a hundred other excuses. But orders must be obeyed. The companies pay a large salary to the head of the collection department to see that the bills are promptly paid. They make rules that collectors must follow. When a bill is presented and a consumer is unable to pay, a sufficient time is given to the consumer to apply to the office for an extension of time, which may be granted. Consumers neglect this notice; as soon as the collector leaves they forget he ever called. The result is, another bill becomes due and a shut-off notice, that means what it says, is left and the consumer thinks that the collector is the most impudent and saucy man he ever met. And still he is only doing what the company employed him to do. At the expiration of the final notice the fun commences. The meter is removed, and the consumer who, up to this time, has paid no attention to the gas question, becomes very much interested. In my case I had received the usual notices and was waiting payday to settle up and neglected to ask for an extension of time. The result was, I received the following note with a copy of the bill I owned from the head collector:

"Dear Sir—As you have not complied with the requirements of our previous notices, we take this means of notifying you that if the inclosed bill for the above address, amounting to $4.80, is not paid by noon of July 31st, 1909, we shall be obliged to enforce our collection rules, looking to discontinuance of service. We hope we will not have to go to this extreme to effect payment. (Signed)

Yours very truly, SUPT. COLL. DEPT."

Thus you see I was given ample time and had received three notices, two of them personally delivered by the collector and the final by mail. The Supervisors having materially reduced my salary a short time previous, which, coming as it did unexpected, I had been unable to adjust myself to the new conditions and so found myself short of ready cash. But as I had known the Superintendent of Collectors for 20 years, I thought he might overlook my case for a little while. This he did, as I afterwards found a notice that read, "Your gas has been shut off for non-payment of bill," left at the meter, meaning that one of my friends, a collector, had called for the purpose and, having lost his gas pliers, left the notice for me to take the hint and pay up before he got back. As the first of the month was only a few days off, and payday in sight, I intended to surely pay up this time, as my bill now amounted to $7.80. True to my word, September 2d I called at the office and paid up in full; but, in the meantime, orders had been sent to the shops to remove the meter, and while I was on my way to pay up a meter man was on his way to carry out his order. No fooling this time; the meter was removed and my wife's troubles began. It was during the lunch hour, while preparing something to eat for the children, that the gas suddenly went out. With 1 hour for lunch and it not ready, all hands got busy and did their share towards getting steam up on the old coal range. There were ashes to remove, wood to chop, coal to bring up and a dozen-and-one things to do before the eight hungry kids were finally fed and on their way to school. No; I was not home to lunch that day; I do not care for cold tongue sandwiches. All hands saved one for me for supper time, though. After they had returned from school there was more wood to chop, ashes to remove and other things too numerous to mention to do, that they would not have had to do had the gas been turned on. Not feeling well, I delayed on my way home to call upon the doctor; one of his prescriptions called for hot plasters to be applied externally during the night. The children having confidence in their father's ability as a gas man to turn the gas on again, had neglected to provide sufficient candles to last the night. Coal oil lamps I had discarded years ago, on account of the danger where the lives of so many children are concerned. With the result that when it became time for a change of plasters, the candles had burned out, and groping in darkness, the reader can imagine the work it was to prepare them? Tossing in bed, unable to sleep, having no light of any kind and praying for daylight, with no one to blame but myself, I decided at the first break of day to make myself a good cup of coffee. I prepared the coffee pot, adjusted it nicely on the gas stove, turned the stopcock, no gas, and I again realized I was stung. I started to prepare it on the coal range and found that my boy had neglected to bring up the kindling wood. In disgust I gave up the idea and awaited the time for the other members of the family to awake and prepare it for me. All the following day, while still confined to my bed on account of sickness, I was repeatedly asked when the gas was going to be turned on. Are you sure you paid the bill? Will they surely turn it on to-night? To all of which I answered "yes," only to be disappointed. The next day was the same, except that a full stock of candles was provided. Saturday came with its holidays, Sunday and Monday, Labor Day to follow. The Saturday laundry work is usually done with the assistance of the gas stove. I began to get anxious and telephoned a friend to call up the office and pay my closing bill, as this is a bill that is about one of the hardest to make the average consumer understand he owes, for they usually think they are paying up to the date the collector calls, while it may be that 10 or 12 days elapse between the day the statement was taken and the day the bill is presented. Knowing I owed this closing bill, and that it might possibly be the Company's rules to pay up all indebtedness, and sign a new order to have the gas turned on, I left the matter in my friend's hands to attend to, being Saturday and the office closing earlier than usual. He evidently did not get there on time, as I am still without light and no prospect of getting any until after the holidays, when I expect to be well enough to attend to the matter myself. Had I placed a deposit on the meter when times were good, I would have stood a chance of receiving an extension of time and still have the money coming at the finish with interest, as I understand the Company pays interest on the money so deposited; but, then, I would not have had the experience. Shutting other people's gas off and having your own meter turned off, are two different branches of the business. But where a company is supplying 80,000 consumers, and has an army of men depending upon it for their wages, it must have a system to get that money in to pay them with, and I was a victim of the system. But, NEVER AGAIN.

Discussion.

Mr. Lowe—Mr. Hill just whispered in my ear an interesting experience. Ask him to narrate it.

Mr. Hill—I just told Mr. Lowe that one evening on my return home to go to dinner, the telephone rang. A lady had called me up, who said, "Is this Mr. Hill?" I said, "Yes!" She said, "You will pardon me for interrupting you, but the office is closed and I could not get anyone there, so I have taken the liberty of calling you up." I said, "What is it?" She said, "Something was wrong with my gas. It was suddenly shut off. I can't get any gas and I have guests for dinner. There is a chicken in the oven, and I would like you to attend to it, immediately, if possible." Putting on my hat I called at her place, which was only a short distance from here. I found there a prepayment meter installed, of which we had no record. The meter was so full of coin that she couldn't put in another. That was the reason she couldn't get any gas. The meter had been put in before my time and we didn't know she was a consumer. I opened the box and took out the coin, she then put in a coin, whereupon the gas was immediately turned on.

The Chairman called for the report of the Editor of the

WRINKLE DEPARTMENT,

whereupon Mr. Lowe explained that as Editor Clarke had been called hurridly to Berkeley he asked Mr. Lowe to present the budget for him. In view of the fact the time is extremely short, and that the "Wrinkles" would be ultimately published, he suggested they be passed for the present, to enable Mr. Schade to present his meter to the attention of the members.

This was agreed to and the Chairman introduced Mr. Schade, of Los Angeles, who had this to say about the

SCHADE SINGLE-DIAPHRAGM METER.

Mr. Schade—I thank you very much for the privilege. I will be very brief. What I have to say is in regard to a new meter, which I supposed Mr. Clark would present to you.

This new one diaphragm gas meter is built like any other square tin gas meter now in use, with the exception of having but one diaphragm and one valve; neither are there any tubes on either side, nor is the valve concealed in a separate box in the gallery. The inlet and outlet are simply short connections on top of the meter, the inlet conveying the gas into the gallery, from whence it is conducted through the valve into the lower section of the meter to both sides of the diaphragm, thus filling the entire meter above and below with gas. The outlet reaches just through the gallery floor and conveys the measured gas into the house pipe. It will thus be seen that the diaphragm measures the gas both ways; first, in filling the inside of the diaphragm, it, at the same time by moving to the front, displaces exactly the same amount it takes in. This is continually repeated as the diaphragm moves back and forth, but, unlike the present style of meters, where the valves are controlled by the diaphragms, in my meter the diaphragm is controlled by the valve, which, as will be seen by the accompanying drawing, is operated by a coil spring made of phosphor-bronze, wire, consequently non-corrosive and practically indestructible, and which, every time it passes the center line, throws the valve first one way and then the other, thus allowing just so much gas to pass through the open port while the other is closed. No more pressure is required to operate this meter than any other—about $\frac{1}{16}$ inch.

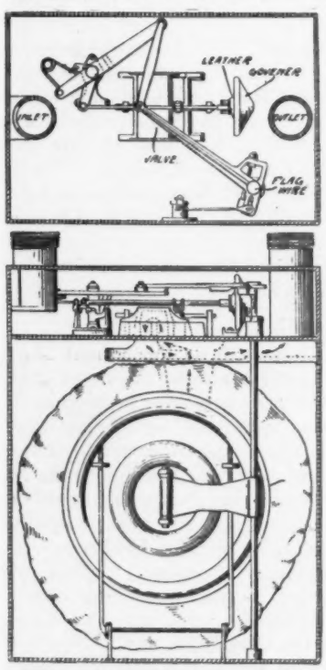


Fig. 1.—Single Diaphragm Gas Meter.

The spring, as stated before, is practically indestructible, because the little tension required in the operation is distributed over the whole coil, not affecting any one place in particular, thus absolutely preventing crystallization of the wire.

A governor is also shown in the drawings, which is a very simple affair, consisting of a little tin cup covered with leather and operating like a diaphragm. It has a very small hole in the back of it, allowing just enough gas to escape to prevent rebounding. In the other direction it works against the pressure of the gas in the gallery, thus allowing the valve to move free and easy, at the same time preventing any possible jar. This, I think, is all that is necessary to describe the meter and its workings. The accompanying drawing clearly shows everything in detail and easy to understand.

I will therefore sum up the advantages of my meter over all others. The model which I displayed in operation before the convention of the Pacific Coast Gas Association was the size of an ordinary 5-light meter, having a capacity of about 300 feet per hour; 30 7-foot tips were attached to the meter, and as many more could easily have been supplied under the pressure we had, without crowding the meter. The meter has, therefore, the following advantages: It has but one diaphragm and one valve, and this valve is not concealed in a separate box in the gallery, as in the present style of meters, consequently, we save: First, one diaphragm; second, the partition which divides the diaphragm in the meters now in use; third, the box which conceals the valve; and fourth, the tubes which run down on either side of the meter.

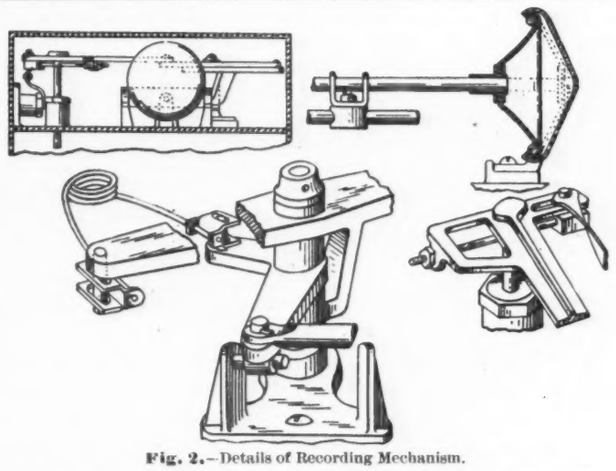


Fig. 2.—Details of Recording Mechanism.

A conservative estimate will reduce the cost of construction of the same sized meter about $1.50. Add to this the difference in capacity from possibly 80 feet to about 300 feet, then consider the price of a 20-light meter, and you cannot fail to see the enormous saving of money. Add to this the cost of repairs, which I firmly believe is less than one-half that of any other meter, because all that is necessary in case of repairs is to remove the top and the front, and the entire inside is exposed and accessible to the mechanic, while at the present time the entire meter has to be dismantled in order to get at every piece, and the more pieces there are in a meter the more liable it is to get out of order. That stands to reason; with the new meter no waste of labor is necessary. The object of this invention was to simplify the meter, reduce the cost of construction and quadruple the capacity. At the present time we have about nine different sizes of meters to reach a 100-light capacity, while with this meter only four sizes are necessary to reach the same results.

Mr. Shade further said: I would like to add that I have three models. One of which has been in operation at the meter shop of the Los Angeles Gas and Electric Corporation for a little over two months. About 50,000 feet of gas is used there monthly, and the meter has never balked nor offered to kick at any time, so I am reasonably sure it will be a success in every particular. I have got it up now next door in the gas supply store to the rear, on the left-hand side, and I would be very pleased, if you have time after the meeting is adjourned, to have you come in and I will show you it in operation. I have 30 burners, all in a bunch, and although it is a little bit of a meter, I will show you what it can and will do. It will take only about five minutes of your time. If you can spare it, I would be pleased; if not, I will be as well satisfied.

Mr. Jones—Mr. President and gentlemen, your committee appointed for the purpose of nominating officers for the ensuing year reports as follows:

COMMITTEE ON NOMINATION OF OFFICERS.

President and Members, Pacific Coast Gas Association: Gentlemen—Your Committee appointed for the purpose of nominating officers for the ensuing year, reports as follows:

For President—Mr. W. B. Cline, Los Angeles, Cal.
For Vice-President—Mr. Frank A. Leach, Jr., Oakland, Cal.
For Secretary-Treasurer—Mr. John A. Britton, San Francisco.
For Assistant Secy.-Treas.—Mr. Henry Bostwick, San Francisco.
For Directors—Messrs. F. V. T. Lee, C. S. Vance, Christian Froelich, C. A. Luckenbach.

Respectfully submitted.

C. C. JONES,
S. S. KANEEN,
J. G. WERRY,
} Committee.

On motion of Mr. Lowe the nominations were accepted and the election of the nominees was ordered cast by the Secretary. (Seconded by Mr. Martin.)

ELECTION OF OFFICERS.

The Secretary subsequently reported that he had acted in accordance with the instructions, and Mr. Martin formally announced the result of the election.

Mr. Martin—I will call for

THE REPORT OF COMMITTEE ON PRESIDENT'S ADDRESS.

To the members of the Pacific Coast Gas Association: Gentlemen—Your Committee appointed to review the Address of our President

has nothing but praise for the manner which it deals with subjects vital to our welfare. This message, coming from a man of large experience in the gas business, carries weight in its every suggestion, and it should be the aim of all of us to put in practice its teachings as far as local conditions will permit.

We feel that the address is of such far reaching importance that no committee report can do it justice, and that it should have been fully discussed by the members from the floor. Your Committee appreciates the great intrinsic worth of the address, and recommends an expression of thanks to Mr. Cline on the part of the Association.

Respectfully submitted,

JNO. MARTIN,
JOHN CLEMENTS,
E. C. JONES,
} Committee.

On motion Mr. Lowe, seconded by several, it was voted that the report be adopted, and that Mr. Cline be tendered a vote of thanks therefor.

FRATERNAL GREETING TO PAST-PRESIDENT COLQUHOUN.

The Secretary—Your committee appointed to address a letter to Past-President Geo. T. Colquhoun, reports the sending of the following letter to him:

SAN FRANCISCO, CAL., Sept. 22, 1909.

To MR. GEO. S. COLQUHOUN, President, Pacific Coast Gas Association:

We, your friends and fellow members of the Association, desire to express our deep regret at your inability to be with us and participate

in the deliberations and discussions of this, the Seventeenth Annual Convention of the Association.

We look back upon your past efforts with a feeling of satisfaction and pride, and realize that the work you have done is a record of which anyone of us should be justly proud.

This Committee of the Association was appointed to convey to you these expressions of friendship and loyalty, and to give expression to the sincere hope that health and strength will be returned to you, so that you will be able to join us in our pilgrimage to Los Angeles in 1910.

Sincerely and fraternally yours,

JOHN D. KUSTER, San Jose,
W. M. HENDERSON, Colusa,
FRANK A. LEACH, JR., Oakland,
} Committee.

Mr. Cline—If there is no objection the report will be received and filed. Mr. Lowe, are you ready to report on a telegram to Mr. Britton now? You have been very coy about it.

THAT TELEGRAM.

Mr. Lowe—I want to say, in reporting on this cablegram to Mr. Britton, that the only member of this Association who came to me for a confidential "tip" was Mr. Cline. I assured him that I would deprive him of a great deal of the pleasure that he might derive if he waited until the proper moment, so he smiled, bowed and passed it along. The cablegram is as follows:

"Britton, Steamship Siberia, Hong Kong: In convention assembled Gas Association sends greetings, beloved, absent Secretary.

(Signed) CLINE, President.

The Chairman—I can see the reason now why Mr. Lowe was so coy.

Mr. Lowe—I saw it earlier. As coming events cast their shadows before, I could see the shadow of President Cline. I did not know what the report of the Committee on Nominations was to be, but I smelled it, or a little bird whispered it, or something of the sort, but at any rate I am sure you will all agree with me that in signing the cablegram as I did I made no mistake.

Mr. Jones here gave some details of the dinner that was to be held in the evening in the St. James Hotel, which subsequently proved a most enjoyable affair.

Mr. Schade, who is the official Gas Inspector for the City of Los Angles, then explained how it was that he had the temerity to attend the sessions, and thanked the Association for the privilege of the floor and other personal courtesies as well.

REPORT OF COMMITTEE ON GAS ENGINEERS' DEGREE.

The Chairman—Mr. Lowe, has the Committee on Gas Engineers' Degree anything to report?

Mr. Lowe—As Chairman of that Committee, I will report that no progress has been made during the year, owing to the fact that Mr. Britton, who is really the leading member, has not been able to give it any time, in view of his present absence. It had been the intention of Mr. Britton, Mr. Jones and myself to get together and present a report of some description which would at least be interesting to you. Under the circumstances I recommend that the Committee be continued, and that Mr. Britton be made Chairman thereof. Mr. Britton will have the principal work to do, and it is a matter which lies very close indeed to his heart. Further, he is best qualified to bring it to a successful conclusion. Mr. Jones and I will be glad to work with him and under his leadership.

The Chairman—If there is no objection, the same committee will be reappointed, with Mr. Britton as its head.

PRRMANENT HOME.

Mr. Lowe—During the year the Committee on Permanent Home took up the question of permanent headquarters for the Association. This Committee was appointed several years ago, prior to the fire, and during a time when it was hoped that the various engineering bodies would combine with our Association in securing permanent quarters. We also hoped that we might secure some aid, probably from Mr. Carnegie, or some other public-spirited citizens, that would enable us to erect an engineering building. During this last year a location was offered us next door to this building by the Gas Appliance Company, and one of our members suggested that probably the Gas Appliance men would be very glad indeed to keep permanent exhibitions there, paying enough for the space to cover costs. The matter was gone into very thoroughly by the Committee, and it was ultimately decided it would be best not to accept the offer, or, for the time being at least, to do anything, owing to the fact that we were not a sufficietly large community. A few years hence it may be possible to do something along lines similar to what they have done in New York, and perhaps erect a special engineering building, when the growth of the engineering societies has been sufficiently large to warrant it. I recommend, therefore, that the Committee be discharged.

The Chairman—If there is no objections, the Committee will be discharged, with thanks. Has the Advisory Board anything to say?

Mr. Jones—The Board has done the usual amount of work, but its work is of such a nature that it is impossible to cover it by a report.

The Chairman—If there is no objection, the Advisory Board will be continued as now constituted. I wish to ask about the Novelty Department.

Mr. Lowe—That has concerned the display of appliances, which has not been held this year.

The Chairman—Is there any necessity for its appointment? It is a dead letter; is it not?

Mr. Lowe—Not at all a dead letter. I am sorry we haven't had the pleasure of a display of gas appliances this year, but I think it should be continued. It has not been convenient to do it this year, but it probably will be in the future, and I think the present Editor of the Novelty Department, Mr. Hollidge, should be reappointed.

FINAL APPOINTMENTS.

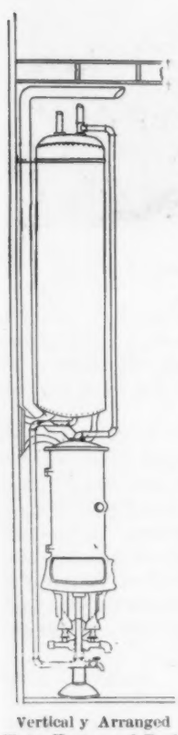
The Chairman—If there is no objection, Mr. Hollidge will be reappointed Editor of the Novelty Department. I beg to announce the appointment of the following:

Librarian—Mr. E. C. Jones.
Wrinkle Department—Editor, Mr. Jos. M. Berkley.
Experience Department—Mr. L. S. Jones.
Novelty Department—Editor, Mr. George H. Hollidge.
Committee to Award Medal for Best Paper at Meeting—Messrs. Jno. Clements, L. P. Lowe, E. C. Jones.

The Chairman—Just one more thing with reference to our next meeting in Los Angeles. In talking to the members, I find out quite a number have never been to Southern California. On behalf of the gas and electric interests in Southern California, I think I can safely say we can give you the best time possible. It takes but a very short time to get there. The Owl train makes the trip in 14 hours, and it will not take up very much of your time. It will be a splendid outing, and will give you an opportunity to see the Southern part of the State, the development in which section has been phenomenal. You will see, not only interesting things in a gas way, but in every other way. I hope you will all come down and give us a rousing meeting. If there is no objection, the meeting will stand adjourned.

THE BELATED WRINKLES.

No. 1.—*Independent Water Heater.* — This wrinkle is intended to show how an independent water heater can be used in close quarters in many apartment houses being built at present. Space is an object, as this blueprint will show. The tank and independent water heater may be set in the corner of the room, and will not occupy to exceed 16 inches of space. This diagram is explanatory within itself. The water heater will show a greater efficiency than it would if connected at the side of the tank. The vent pipe will lead to the back of the tank, and will not be exposed to view. The idea is to economize space in using an independent water heater with a 20 or 30-gallon tank, so as not to occupy any more space than the combination water heater and tank.—C. H. HIRT, San Diego, Cal.



Vertical y Arranged Water Heater and Tank to Economize Space.

No. 2.—*Use of Gas Water Heaters to Obtain Hot Water Instantaneously.*—Allow me to contribute the following upon use of gas water heaters of the ordinary type to obtain hot water instantaneously, without the water boilers heretofore considered necessary. These heaters can be set up in the kitchen with connections direct to the sink, bathtub, etc., or in a bathroom as a substitute for the more expensive nickel-plated heaters.

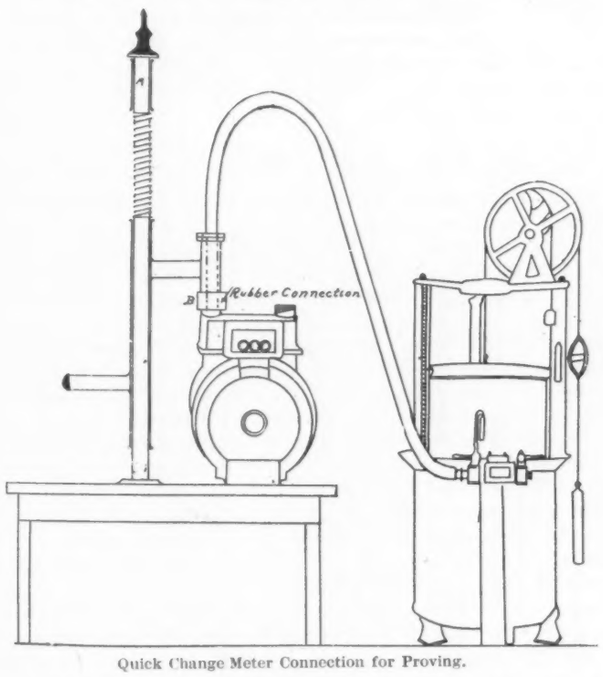
The objection will at once be raised that if the water boiler be eliminated, the heater will be liable to explode if the water outlet be closed while gas is turned on. One need have no fear as to this point. As soon as steam begins to form, the water hammer calls attention to the heater at once, but if any member of the Association is skeptical as to this point it will be a very easy matter for him to fit a cock to the water outlet and experiment for himself, leaving the gas lighted—say for half an hour. It is necessary, however, that the water be not shut off before it comes to the heater, and the only trouble we have experienced has been due to this cause, and out of over 100 heaters that have been in use for over a year, we have only had three complaints, and as we are careful to notify consumers to be sure that water can reach the heater at all times, there was no kick in these cases. While any heater may be used for this purpose, we have secured the best results from one having a double copper coil close wound.

We have had many complaints from consumers using nickel-plated heaters that the water was sooty. This was caused by the down draft. In some cases we could overcome this difficulty by placing down draft hoods immediately over the heaters. In other cases we have had complaints with heaters of this class that the water was green. Where these evils could not be remedied, we have substituted the heaters above described, and in no case has there been any further complaint. One of the great advantages of using this class of heater for instantaneous work is the fact that the coil and burner are accessible so that the consumer can clean the same himself without expense.

Before we fitted up heaters in this way, consumers were constantly complaining about their gas bills. Further, we found it difficult to sell gas ranges to replace coal and wood stoves because it cost so much for hot water. Since making the change to direct-connected heaters, we have doubled our sale of ranges, and we are now selling five heaters where we only sold one before. The bathtub is raised 18 inches above the floor so that the water can be reached without stooping. The gas pipe is connected to a meter reading at one hundredths of a foot so that the customer can see at a glance just how much gas will be required to heat a tub of water.

Consumers can thus see that our statement that a bath costs from 3 to 4 cents with $1.50 gas is correct. Further, where a consumer does not understand the use of a heater or has any trouble, it is very easy to locate the cause. Since making this change, our complaints as to water heaters have practically ceased, and our business has increased materially.—C. L. WIGHT, Honolulu, T. H.

No. 3.—*An Adjustable Meter Prover Connection.*—An adjustable meter prover connection. It is quickly and easily adjusted for any size meter without any additional connections. Give lock nipple "*A*" a one-quarter turn to the right; then raise or lower same until



Quick Change Meter Connection for Proving.

the proper tension of the spring is secured to make a tight joint at "*B*," which is a thick rubber gasket. Then turn "*A*" back to its original position. The same adjustment will do for the larger size meter. Any size from a No. 1 Sprague to a 20-light tin meter can be proved with this size connection.—A. P. HENNING, San Diego, Cal.

No. 4.—*An Improvement on Our Hoist for Filling Purifier Boxes.*—Some time ago we devised a successful scheme for converting a cement hoist into an oxide hoist, and an article was written thereon. We have now made an important improvement on this scheme, and for the benefit of those who did not read our last article, we will describe the hoist again with its improvement.

We realized that it was costing us unneccessary labor and money by continuing the system that we had in vogue of filling our purifier boxes with the ordinary oxide conveyor, so we determined to find a means for cutting down this unneccessary expense.

After watching the hoists on new buildings conveying cement

from the ground to the top floors, we made an examination of this hoist and found that we could adapt it to our use very nicely by making a few changes. As there are several different styles of these hoists, we investigated until we found a style that we thought would accomplish our purpose. A galvanized iron bucket hoist was selected. A steel tower was built, with adjustable clutches at the top so as to deposit the material at any point desired. This iron bucket is pulled up the tower by means of a windlass driven by a motor, and when it reaches the desired point the clutches trip it and it empties its contents into the galvanized iron chute which is placed there for that purpose. This chute is about 18 inches deep and open on top. It runs directly into the center of the purifier house and its course may be diverted into any box desired by means of another chute attached to the first one by the help of a swing joint.

With this system it only takes about an hour to fill a box, against 5 hours with the old system. The life of the oxide is much longer, too, as it doesn't break up into fine powder as it does when using the conveyor.

While this system was a big improvement on the old system of the conveyor, we found that we could even improve on this one. When our plant increased to such an extent that we were obliged to double our purifier capacity, and we found it imperative to install another apparatus for conveying oxide to the boxes, we had plans and specifications drawn up and put into service another hoist similar to the one just described, but having the chute made of 15-inch galvanized iron pipe and having three different stations, as it were, for the discharge of the oxide. These stations or platforms for discharging oxide are located about one-third, half way and nine-tenths of the way up the tower. From the nearest platform we have pipe running to the nearest boxes to the tower. At the second platform the pipe runs to the middle boxes, while at the top platform the pipe runs to the boxes furthest away from the tower. By this improvement it is possible to have a pipe run directly from the discharge platform to each and every box, instead of having one chute for the whole set of boxes. We also find that by having the 15-inch pipe instead of the chute, there is no loss of oxide from the wind blowing it out.—F. C. Millard, Los Angeles, Cal.

No. 5.—*High Pressure Submarine Gas Main.*—The San Diego Consolidated Gas and Electric Company, San Diego, Cal., were solicited very strongly to supply the city of Coronado, Cal., lying across the bay from San Diego, with gas.

Coronado is only a small town and the probable greatest number consumers in sight was about 300, with the possibility of furnishing gas to a "tent city" with 500 consumers or more for 3 mouths in the year.

Several propositions were proposed to supply those customers. Finally a submarine high pressure gas main from San Diego to Coronado was decided upon. When the capacity of this main and the necessary obstacles to be overcome were considered, two propositions were estimated upon. One, the laying of two 1¼-inch heavy lead pipes across the bay in different localities to avoid the possible interruption of service from anchors of boats, these two pipes to come ashore at the same locality and to be virtually one from there on. This was finally abandoned on account of the small capacity which, while great enough for the present, would not give capacity we thought necessary during the life of the pipe.

A 4-inch extra heavy cast iron ball and socket pipe was used for this work, and the danger from the pipe being broken by anchors was avoided by running to a point on the bay where the ferry crosses from San Diego to Coronado. This particular line between ferry slips is held, by the harbor commissioners, free from anchorage. In this locality the telephone cables also cross the bay. The distance from shore to shore is about 4,000 feet. Five hundred feet of this amount we were able to lay at low tides. The balance was laid from a specially constructed chute on a lighter, which lighter was moved across the bay by the use of windlasses attached to anchors. These anchors were shifted periodically by a launch. The pipe used for this line was made in ordinary lengths of 12 feet with a standard joint on one end, and either a ball or socket on the opposite end; that is to say, two lengths with a standard joint put together, left a ball on one end of this 24-foot length, and a socket on the other end, thus giving a flexible joint every 24 feet. The standard joints were lightly yarned but heavily leaded. The ball and socket were cleaned only, and the ball then placed in the socket and leaded and calked. This was all done on the lighter; in fact, all of the material for this work was placed on the lighter before it was moved from the wharf. It required about 2 weeks to construct and arrange the chute on this lighter, the lighter being 24 feet wide by 90 feet long. The chute was built up from one end of the lighter at an angle of about 50° from a horizontal.

The capstans and windlasses were fastened to the four corners of the lighter and a steam hoist was installed on the lighter for the double purpose of pulling the lighter ahead by the use of headlines and anchors, and also hoisting all of the pipe to the work benches and chute on the incline. All of this is fairly well shown in the photographs which are herewith attached. There is, however, a very important part of this construction that cannot be seen, as it is underneath the water. It consists of two 100 feet piles placed about 4 inches apart and bolted together and hinged at the upper end to supporting timbers bolted to the lighter. These piles at the lower end have a pair of iron trucks which are securely bolted to the lower side of the piles for the combined purpose of rolling on the bottom of the bay to carry the weight, and also to act as anchors that would not allow these piles and the pipe (when it was being lowered) to be swung sideways by the tide.

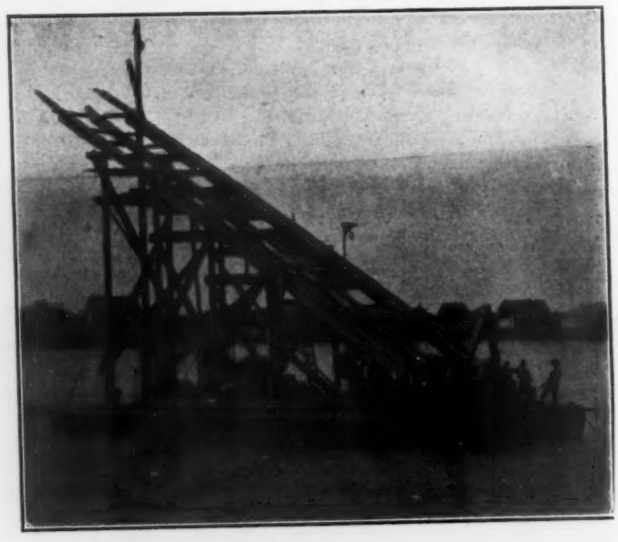


Fig. 5.—Laying Mains Under Water.—Wrinkle No. 6.

The line of this pipe passes across the channel of the bay, which is about 40 feet deep at this point, and the tides are very swift. At one time during the laying of this pipe, seven 800-pound anchors were required on one side of the lighter to hold it against the wind and against the tide, which were in the same direction.

Another advantage in these piles extending down to the bottom of the bay from the lighter is that, if the lighter shifted even 50 or 100 feet or twisted from the line of the shore points established, these wheels would get only a slight distance out of the true line which we wished to follow, acting like a long tail to the lighter. As proof of this, the divers reported that in no place were there any bends in this pipe, so far as they could see, that were more than 18 inches out of a straight line. It required 3 days to lay the pipe across the bay, and 8 days at $40 per day for the divers to calk the pipe until it was absolutely tight.

The divers were employed part of the time while we were laying the pipe, to follow the line as it was laid and watch out for any breaks or interference with any cables at present in the bay. Each time that work was ceased for the day, air pressure was applied from the shore end by plugging the end on the lighter, which proved that there were no broken lengths in the first place, and allowed the divers to see any bad leaks.

By reference to the photograph it will be seen that the chute built on the lighter was constructed of two 80-foot piles, spaced 4 inches apart and bolted together, and erected on a framework to give them the necessary angle. On each side of this piling were arranged work tables where four or six 72-foot lengths of pipe could be made up and be in readiness to roll into the center chute at short notice after the lighter had been moved ahead 72 feet. These lengths had the standard joints made up on the floor of the lighter, and then hoisted by the use of a steam hoist to the work tables on the chute where two ball and socket joints were made up,

After the lighter was moved ahead until only 3 or 4 feet of the pipe was above the water, another length of 72 feet was rolled into the chute and lowered carefully into the socket. These joints were usually run and calked in from 10 to 15 minutes, when the lighter was again ready to be moved ahead.

The different angles which the piling, extending from the end of the lighter, took for the various depths of water caused considerable movement of the joints (both the ball and socket and the standard joints) during the time of laying. In fact, at some times the angles of the pipe just as it was leaving the lighter were quite sharp, but no trouble was encountered in making these joints absolutely tight later on. At several times 2 or 3 joints would stand clear in the air, not touching the chute for 30 feet. This probably could not have been handled that way, except for the extra heavy pipe, which was 25 pounds per foot, or 300 pounds per length of 12 feet. This ball and socket joint was of the class in which the lead is imbedded in the ball end and the ball end of the pipe carefully machined.

After the pipe was laid to the opposite shore, the pressure was kept on this line all day, allowing the divers to see any leaks and calk them either by hand or with an air hammer. To use the air hammer a gasoline air compressor capable of delivering 80 pounds of air was placed on board the diving outfit's lighter. This, with the necessary hose and a small calking air hammer, enabled the divers to do much more rapid work, as the air could be used to clear the sand from about the joints, and then the rapid work of the hammer completed the work quickly and solidly. Eight days were required with this diving outfit to make this pipe line tight. It was tested to 75 pounds and dropped only 10 pounds in 12 hours.

At the Coronado shore end a 30-gallon drip pot was installed, with arrangements made for blowing the water from it by the pressure of the gas. A similar one was installed in the company's yard near the governor house. Also in this yard a steel tank, 90 inches in diameter and 30 feet long, was installed for storage primarily, but with the arrangements that if any water came through with the gas it would be separated in this tank. We have yet to get a bucket full of water out of any of these drips, which is quite a surprise to us. From the storage tank the gas is piped to a double district governor, there reduced from 20 pounds (the pressure which we at present carry on this line) to 4 inches of water pressure, and distributed through 8 miles of mains to 250 customers through 4-inch and 2-inch steel pipe.

The cost of the high pressure installation was about $5,800.—R. L. Clarke.

Handy Tools for the Main Gang.

By "M."

The sketches shown here represent two tools that can be made by any smith, at a small cost, and that will prove very useful where joints are to be cut out or pipe is to be removed. Fig. 2 shows a cutting tool, made of about proportional size as sketch indicates, and as used in the manner illustrated in Fig. 1. This tool is of the same type as that used by all main gangs for cutting pipe, except that the eye is reversed, permitting the man striking the tool with the sledge greater freedom of stroke, and affording the man holding the cutting tool greater protection and at the same time enabling one to cut the pipe with less waste and in less time, as the pipe is cut closer to the joint which causes it to be more rigid and broken or cracked more readily.

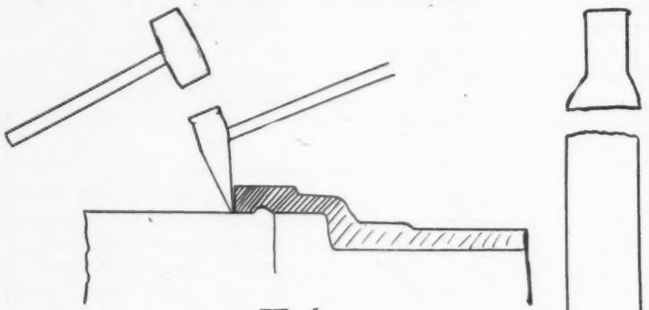


Fig 1

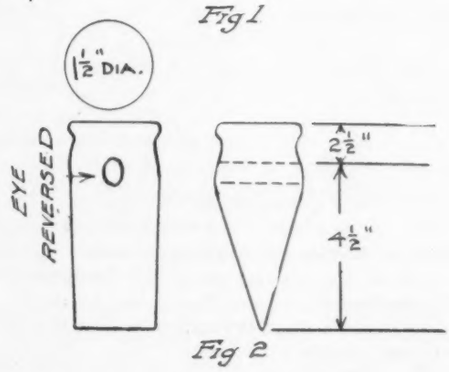


Fig 2

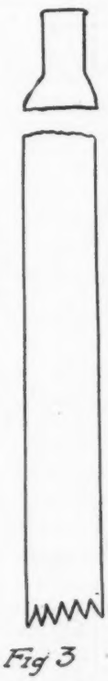
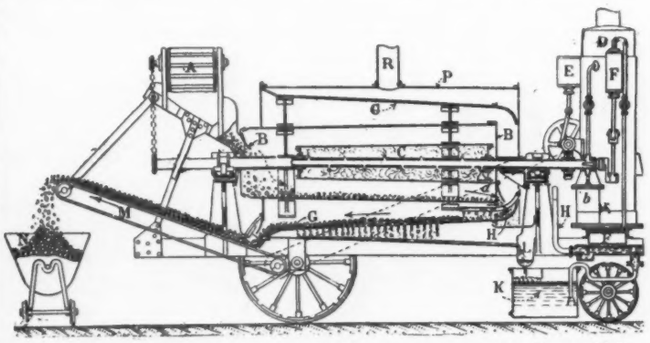


Fig 3

Fig. 3 shows a tool made from an old yarning iron, and used for "cutting out" cement joints. This tool is used in the same way as a yarning iron or a calking hammer may be used, for driving it.

The Boltshauser Apparatus for the Tar-Coating of Broken Stone.

Last November *Le Genie Civil* published an illustrated description of an apparatus, known as the Boltshauser machine, which has great vogue at present in France amongst those who favor the tar macadam plan of road construction. Those interested in this subject know that during one step in the method of tar macadam road construction that it is essential to cover with tar the small or broken stones which constitute this class of road material. The illustration here-



Vertical Section Through the Boltshauser Machine for Coating Broken Stone with Tar.

with affords an excellent idea of the construction and plan of operation inherent to the Boltshauser method. As the coating can be performed in two ways—either the cold, broken stone can be immersed in hot tar or the latter in cold condition may be poured on hot stone, broken to suit. The cut shows a sectional view of a machine constructed on lines favoring the second plan of mixing or covering. The machine is carried over 4 wheels, wherefore it is easily carried over the road to compass the exigencies of the placing of material, etc. Broadly, the machine comprises a loading elevator, a series of rotating drums of the concentric order, a steam boiler outfitted with the needful complement of engines and pumps and a branch for unloading. When in operation the broken stone is lowered from the pile by way of the elevator, shown at *A* in the bottom, *B*, of rotating drum. From thence it is carried down the sloping bottom of *B* to be deposited there onto the drum, *G*, which rotates on the axle, *B*. In passing down *B* the broken stone is heated to a temperature between 130° and 150° F. by the cylinder *C*, the latter being full of steam fed through the hollow axle from the boiler *D*. Water of condensation is led away from the collector *a*, at the boiler end of *C*, through the hollow axle to tank *b*, where it can be drawn off. Tank *F* is filled with tar, which is pumped through pipe *H* to the boiler end of drum *G*, there to be mixed with the hot stone just dropping out of *B*. Led down the slope by gravity, the separate pieces of stone are coated with the tar and are dropped out of *G* onto elevator *M* and are thence dropped into barrows to be carted to the road. The excess tar in *G* drops through openings and finally reaches, via strainer *L* and tank *K*, the pumps *F* to be used over again. From the illustration it may be seen that all of these movements are controlled entirely from the boiler and its accessories, and that the process is entirely automatic from stone pile to barrow.

Mr. Edward A. Bond, who has had charge of the new business division of the North Adams (Mass.) Gas Light Company, since 1903, leaves its service the 1st prox.

Meeting Times of the Various Gas Associations.

American Gas Institute.—Annual meeting, October, 1910. Atlantic City, N. J. Officers: President, Wm. H. Bradley, N. Y., City; Secretary, A. B. Beadle, 29 West 39th street, N. Y. City.

Canadian Gas Association.—Annual meeting, June, 1909. Hamilton, Ont. Officers: President, J. S. Norris, Montreal, P. Q.; Secretary and Treasurer, A. W. Moore Woodstock, Ont.

Empire State Gas and Electric Association.—Annual meeting, Nov., 1910. New York City. Officers: President, C. R. Huntley, Buffalo, N. Y.; Secretary, C. H. B. Chapin, 29 W. 39th street, New York City.

Gulld of Gas Managers of New England.—Annual meeting, December. Young's Hotel, Boston; monthly meeting, second Saturday. Officers: President, A. K. Quinn; Newport, R. I.; Secretary, Walter G. Africa, Manchester, N. H.

Illinois Gas Association.—Annual meeting, time, March 18, 1910, Chicago, Ills. Officers: President, E. G. Schmidt, Springfield, Ills.; Secretary-Treasurer, C. B. Strohn, Elgin, Ills.

Illuminating Engineering Society.—Annual meeting, January 14, 1910. Meetings of Sections, monthly. President, W. H. Gartley, Philadelphia, Pa.; Secretary, Preston S. Millar, 29 W. 39th street, N. Y. City. Sections: New York: Secretary, Albert J. Marshall, 227 Fulton street. New England, Secretary, L. D. Gibbs, 39 Boylston street, Boston, Mass. Philadelphia, Secretary, F. N. Morton, Broad and Arch streets. Chicago, Secretary, T. R. Beebe, 157 Michigan avenue,

Indiana Gas Association.—Annual meeting, January 19, 1910, Indianapolis, Ind. Officers: President, J. W. Dunbar, New Albany, Ind.; Secretary-Treasurer, Philmer Eves, Indianapolis Gas Company, Indianapolis, Ind.

Iowa District Gas Association.—Annual meeting, time, June 23, 24, 25, 1910, Sioux City, Ia. Officers: President, Geo. H. Waring, Omaha, Neb.; Secretary and Treasurer, G. I. Vincent, Des Moines, Ia.

Kansas Gas, Water and Electric Light Association.—Annual meeting, time, ———— Wichita, Kas. Officers: President, W. A. Scothorn, Hutchinson, Kas.; Secretary and Treasurer, J. D. Nicholson, Newton, Kas.

Michigan Gas Association—Annual meeting, time, September, 1910; ———— Officers: President, B. O. Tippy, Grand Rapids, Mich.; Secretary-Treasurer, Glenn R. Chamberlain, Grand Rapids, Mich.

Missouri Electric Light, Gas, Water Works and Street Railway Association.—Annual meeting, April 14, 15 and 16, 1910; Jefferson City, Mo. Officers: President, W. A. Bixby; Secretary and Treasurer, C. L. Clary, Sikeston, Mo.

National Commercial Gas Association.—Annual meeting, third week in October, 1910: Boston. Officers: President, E. N. Wrightington, Boston; Secretary, Lucius S Bigelow, 106 Fulton street, New York City.

Natural Gas Association.—Annual meeting, May 17, 18 and 19, 1910; Oklahoma City, Okla. Officers: President, William H. McKenzie, Kansas City, Kas.; Secretary, T. C. Jones, Delaware, O.

New England Gas Association.—Annual meeting, third Wednesday in February; Boston. Officers: President, Walter G. Africa, Manchester, N. H.: Secretary-Treasurer, N. W. Gifford, East Boston, Mass.

Oklahoma Electric Light, Railway and Gas Association.—Annual meeting, May 18, 19 and 20, 1910; Oklahoma City. Officers: President, F. H. Tidman, Oklahoma City, Okla.; Secretary-Treasurer, Galen Crow, Guthrie, Okla.

Pacific Coast Gas Association.—Annual meeting, ————, 1910, Los Angeles, Cal. Officers: President, W. B. Cline, Los Angeles, Cal.; Secretary-Treasurer, John A. Britton, 925 Franklin street, San Francisco, Cal.

Pennsylvania Gas Association.—Annual meeting, April 13, 1910, Easton, Pa. Officers: President, E. G. Holzer, Easton, Pa.: Secretary-Treasurer, William H. Merritt, Lebanon, Pa.

Society of Gas Lighting.—Annual meeting, Dec. 9, 1909; monthly meeting, second Thursday. Place, New York City. Officers: President, Fred. S. Benson; Secretary, George G. Ramsdell, 1123 Broadway, New York.

Southern Gas Association.—Annual meeting, Feb. 16, 1910, Chattanooga, Tenn. Officers: President, R. C. Congdon, Atlanta, Ga.; Secretary-Treasurer, James Ferrier, Rome, Ga.

Southwestern Electrical and Gas Association.—Annual meeting. ————, 1910, Beaumont, Tex. Officers: President, R. B. Stichter, Dallas, Tex.; Secretary's office, 300 Commerce street, Dallas, Tex.

Wisconsin Gas Association.—Annual meeting, May 11 and 12, 1910, Milwaukee, Wis Officers: President, R. B. Brown, Milwaukee, Wis.; Secretary-Treasurer, H. H. Hyde, Racine, Wis.

Recent Patent Issues.

Prepared for the AMERICAN GAS LIGHT JOURNAL by ROYAL E. BURNHAM, solicitor of patents and counselor in patent causes, 833 Bond Building, Washington, D. C., from whom illustrations and specifications of any patent mentioned below may be obtained for 10 cents.

44,004. Charging Gas Retorts. H. J. Toogood, Elland, England, assignor to R. Dempster & Sons, Limited, same place.

944,005. Lid for Gas Retorts. H. J. Toogood, Elland, England, assignor to R. Dempster & Sons, Limited, same place.

944,274. Automatic Gas Analyzing Apparatus. E. H. Peabody, New York City.

944,332. Gas Producer. A. Jabs, Zurich, Switzerland.

944,638. Device to Control the Reception of Gas in Buildings. F. Schmidt, New York City.

944,686. Automatic Gas Regulator. G. H. Murray, Bristol, Vt.

944,771. Safety Attachment for Gas Lighting Burners. H. E. Campbell, New Haven, Conn.

944,856. Gas Generator. L. C. Gilmore, Gardena, Cal.

944,928. Incandescent Mantle for Gas Burners. M. Weickert, Plauen, Germany.

944,988. Time Mechanism for Operating Gas and other Valves. V. H. Slinack, Philadelphia, Pa., assignor to the Pennsylvania Globe Gas Light Company, same place.

Items of Interest
FROM VARIOUS LOCALITIES.

MR. E. W. CAMPBELL, Secretary of the Orange (N. J.) Gas Light Company, has notified the shareholders that the annual meeting of the Company will be held to day, in its offices, 763 Broad street, Newark, N. J.

MR. GUSTAVUS SULZER, a pioneer maker of gas fixtures in this country, died at his home in Wissahickon, Pa., the morning of the 26th ult. He was in his 72d year.

THE old 60-foot diameter holder formerly maintained by the Rahway (N. J.) Gas Light Company, was dismantled during the severe storm that visited this section of the country Christmas night. The gas supply was not interfered with, as the Rahway district has its gas laid on direct from the works at Elizabeth, N. J.

"B. W. V.," writing from Omaha, Neb., under date of the 27th ult., says: "I thought you might be interested in hearing how the local gas men, and others, spent part of their Christmas eve. Here is the story, as recounted in the columns of the Omaha *World-Herald*: 'The operatives of the Omaha Gas Company, all of them and their wives and children besides, were tendered their regular annual Christmas entertainment by their employers in the hall over the Company offices. The event has always been a joyous one, but it is just possible that the affair last night was the Company's best effort. There was everything that ordinarily goes to make a successful Christmas entertainment and a few things besides. There were several hundred present. Superintendent G. H. Waring, of the Gas Company, presided over festivities and introduced the various entertainers. The programme consisted of speeches by officers and employees of the Company, piano selections, violin solos and music on the flute. The children of the employees had the time of their lives and added to the joyousness of the occasion by taking an active part in the programme. Mr. G. W. Clabaugh, Vice-President and Secretary of the Company, made a congratulatory address to the employees and then called to the stage its oldest employee, Mr. Isaac Battin, Treasurer and Engineer. Mr. Battin has been with the Company 32 years. He was presented with a handsome gold medal as a token of appreciation for his long service. There was great excitement among the children when Santa Claus announced over the telephone that he was on the way to the scene of the festivities. He arrived in due time and a Christmas tree, laden with presents for the little folks, was revealed. No one was forgotten.'"

THE Gas Operating and Constructing Company has been organized in Los Angeles, Cal., to take over the concession, to construct and operate a gas plant in Guadalajara, Mexico, that was granted by the authorities to one J. G. Dominiguez in 1907. The Vice-President and General Manager of the new concern is Mr. H. W. Burkhart, well-known to the gas men of the Pacific Coast.

MR. A. S. COOKE, formerly Secretary and Treasurer of the United Gas and Electric Company, of New Jersey, is now actively carrying on the duties of Manager of the Citizens Gas Company, of Terre Haute, Ind., vice Mr. E. A. Wakeman, who will hereafter act in the capacity of Travelling Auditor or Inspector of the various properties of the United Gas and Electric Company, of which the Terre Haute plant is one.

ONE of the prettiest, best appealing greetings sent out by a business house to its patrons at least in so far as the receipt of such by us is concerned, and they are many, was that issued by the H. Mueller Mfg. Company, of Decatur, Ills. It was neither lengthly nor ornate, but it was pretty and appealing.

"T. J. M." is informed that the contract, complete in every particular, for the construction of the new gas works at Sumter, S. C., was awarded to the Bartlett-Hayward Company, of Baltimore. The contract includes the placing of something over 6 miles of gas mains, none of which pipe is to have a diameter of less than 4 inches. The location chosen for the plant proper is at Hudson and Dobson streets, and the temporary offices of the company are in the premises, No. 33 East Liberty street, with Mr. J. A. Apperson in charge.

Mr. W. Grover Pater, who retired from the office of Deputy City Controller of Terre Haute, Ind., the first of the month, has accepted the place of head bookkeeper to the Citizens Gas and Fuel Company, of Terre Haute.

The Castine Light, Power and Heating Company, to supply gas and electric currents to the residents of Castine and the adjoining town of Brooksville, Me., has been organized by Messrs. W. A. Walker, William Sargent and Henry W. Sargent. The first named is President of the concern.

The new offices of the Peoples Gas Light Company, of Manchester, N. H.—its headquarters were badly singed by fire some time ago—will be a credit to the city when finished and occupied. So say the local papers, and no one can or may truthfully gainsay Mr. Africa's taste in fittings and furnishings, or in good fellowship, for the matter-of-that.

At 2 P.M. of the 25th inst. a special meeting of the shareholders in the Gas Securities Company, of Hartford, Conn., will be held for the purpose of considering how to best refinance the Company. It is the owner of the Hartford Gas Light Company, and the former shareholders of the Gas Light Company own the preferred and part of the common stock of the Securities Company. The former has outstanding $750,000 stock and $600,000 bonds. The Securities Company owns $750,000 of 8 per cent. preferred stock, and $750,000 common stock, now paying 10 per cent. The preferred stock is guaranteed 8 per cent. by the United Gas and Electric Company. The proposed plan is to revert to the original Gas Company by giving the preferred stockholders of the Securities Company stock for Gas Company common stock. At present the latter has only $750,000 of common stock outstanding, so a meeting of that Company is to be called to authorize the issue of the preferred stock. The same guaranty will be put upon the new preferred shares that is now on record regarding those of the Securities Company.

Mr. Charles E. Caster has been appointed Superintendent of the power plant of the Peoples Gas and Electric Company, of Burlington, Ia. The electric light, power and steam heating divisions of the plant are under the charge of Mr. Daniel D. Bentzinger.

Hundreds will mourn the death of Robert Adams, who passed away in Indianapolis, Ind., about a fortnight ago. Ten years ago, when in his prime as Manager of the Muncie (Ind.) Gas Light and Fuel Company, his name was a household word in that section of the Hoosier State.

At a meeting held late in December the Board of Directors of the Louisville (Ky.) Gas Company authorized the issuance of $1,000,000 in bonds, the proceeds therefor to be put to improving the plant of the Louisville Electric Lighting Company. The bonds have already been subscribed for, and the floating indebtedness of the Company will be paid off in full. Meanwhile the Directors have voted to pass the regular January dividend on the Gas Company's share.

Mr. S. E. Callender has been appointed Superintendent of the Racine (Wis.) Gas Light Company. He succeeds Mr. H. H. Hyde, who last fall resigned the Superintendency at Racine to go to a responsible position in connection with a Company on the Pacific Coast.

Mr. H. R. Frost resigned his position as Chief Clerk of the United Gas Company and the Edison Light and Power Company, of Wichita, Kas., in order to accept a good position with the Enid (Okla.) Electric and Gas Company.

The officers elected at the annual meeting of the New Haven (Conn.) Gas Light Company were as follows: Directors, H. S. Hotchkiss, Charles H. Nettleton, Geo. J. Bush, Geo. D. Watrous, Eli Whitney, A. H. Robertson, F. F. Brewster and James S. Hemingway. Mr. Nettleton was re-elected President.

The Edison Electric Illuminating Company, of Boston, will reduce its retail selling rate for electricity to 10 cents per kilowatt, instead of 12 cents as heretofore. The concession became effective the 1st inst.

Mr. William J. Taylor, for 40 years or more connected with the force of the Cohoes (N. Y.) Gas Light Company, was found dead in bed the morning of the 27th ult. Heart disease was the trouble.

"B. S. R." forwards the following from Portland, Ore., under date of the 1st inst.: "Eastern stockholders of the Portland Gas Company have made tentative arrangements for the sale of the Company to the Electric Bond and Share Company, of New York, and a meeting of the stockholders is to be held in this city the first week in January for the formal approval of the sale. The price offered for the stock is $130 a share, $30 above the par value. Of the $3,000,000 stock for which the Company was incorporated, $1,950,000 has been issued, and this, at the price offered, will bring a total of $2,533,000 to the holders, making about $1,000,000 for the Portland stockholders. The Electric Bond and Share Company is controlled, it is understood, by the same Eastern financiers who control the Oregon Electric Railroad Company. The Electric Bond and Share Company gained control of a number of gas companies recently, it was said, one of which is the Spokane Gas Company. A. L. Mills and C. A. Dolph, Directors of the Portland Gas Company, and E. A. Wyld, Secretary and Treasurer, estimate that the deal, thus far, has been managed in the East, and few of the details are understood here. In addition to the stock issued, the Portland Gas Company has 5 per cent. bonds outstanding for $750,000, and $500,000 in convertible notes. Officers of the Portland Gas Company are: President, C. F. Adams; Vice President, C. A. Dolph; Secretary-Treasurer, E. A. Wyld; Directors, A. L. Mills, H. L. Corbett, J. F. Failing, Jacob Kamm and L. A. Lewis."

Mr. Jesse E. Phillips, now Chief Engineer of the plant of the Sandusky (O.) Gas and Electric Company, has been appointed Chief Engineer of the water supply of the named city.

"W. T.," sends along the following: "At the annual meeting of the Waynesboro (Pa.) Gas Light Company, the following Directors were elected: E. Elden, W. Middlekauff, G. E. Duler and R. H. Lehman. The latter succeeds Mr. W. B. Stottlemeyer."

General Manager W. H. Snow, on the 29th ult, handed the following report to the Mayor and Board of Alderman, respecting the business done by the city's gas and electric light department. Among other things, the report says:

"In the business done from the gas works there has been but little change from that done in 1908. There was sent out from the works 2,989,500 cubic feet more of gas, or a gain of only 1.6 per cent. While there has been a good gain in the number of gas meters set, the increase in gas consumption has not kept up, owing to the department's losing some mill lighting, and a number of its gas customers changing over to electric lighting. There have been 980 new meters set during the year, or a gain of 11.19 per cent. in the total number set. There have been laid 3.6 miles of main pipe, largely 8 inch, upon the Springfield road. There is a total of 48.99 miles of gas mains in the city. There have also been run 209 new service pipes. There have been the usual repairs made, including the renewal of 3 benches of retorts. There have been added to the works 4 new purifiers. At the electric station, the additions and alterations commenced in 1908 were completed, giving the city a modern and finely equipped central station, one that can be run economically and made to show good results. The increased business from it during the year has been phenomenal, amounting to 50.8 per cent. more than that done in 1908. Notwithstanding the large additions made to the plant the past year, if such an increase continues for the next few months, it will be imperative to make further additions to the apparatus another year. During the year there have been added 474 meters to those already set, or a gain of 33.8 per cent. There has been strung about 11½ miles of wire, making a total of 197½ miles in use. There have been 75 new poles set. The transformers have increased 33 in number. There have also been added 16 new street arc lights and 17 incandescent street lights."

THE AMERICAN GAS LIGHT JOURNAL

A. M. CALLENDER & CO.,
PROPRIETORS.

THOS. J. CUNNINGHAM,
ELBERT P. CALLENDER,
EDITORS.

CHARLES H. WADELTON,
MANAGER.

MONDAY, JANUARY 10, 1910.

The Market for Gas Securities.

The feature in the city gas share market was a sharp rise of 10 points in Brooklyn Union, which opened this morning (Friday) at 160 to 161. This foreshadows likely another dividend of an extra sort, which would be justifiable from the knowledge that the Company's earnings in the year just closed show remarkable gains. Consolidated fairly held its own, in spite of an attack on it by the bears early in the week. It is strange that the Bruin will take such chances, especially in view of the singeings some of them got along this line since the famous decision came from Washington.

The general market on gas account is steady, save in the case of Washington gas, which is again close to the 400 mark.

Gas Stocks.

Quotations by George W. Close, Broker and Dealer in Gas Stocks.

16 WALL STREET, NEW YORK CITY.

JANUARY 10.

☞ All communications will receive particular attention.

☞ The following quotations are based on the par value of $100 per share:

N. Y. City Companies.	*Capital.*	*Par.*	*Bid.*	*Asked*
Consolidated Gas Co.	$78,177,000	100	158¾	158⅞
Central Union Gas Co.—				
1st 5's, due 1972, J. & J.	3,000,000	1,000	98	101
Equitable Gas Light Co.—				
Con. 5's, due 1932, M. & S.	1,000,000	1,000	—	105
Mutual Gas Co.	2,500,000	100	155	165
New Amsterdam Gas Co.—				
1st Con. 5's, due 1948, J. & J.	11,000,000	1,000	100	101⅛
New York & Richmond Gas Co. (Staten Island)	1,500,000	100	37	43
1st Mtg. Gold Bds. 5 p. ct.	1,000,000	—	100	101
New York and East River—				
1st 5's, due 1944, J. & J.	3,500,000	1,000	104	107
Con. 5's, due 1945, J. & J.	1,500,000	—	97	101
Northern Union—				
1st 5's, due 1927, J. & J.	1,250,000	1,000	94	100
Standard	5,000,000	100	—	75
Preferred	5,000,000	100	70	100
1st Mtg. 5's, due 1930, M. & N.	1,500,000	1,000	100	105
The Brooklyn Union	15,000,000	1,000	160	161
1st Con. 5's, due 1948, M. & N.	15,000,000	—	95	99
Yonkers	299,650	500	130	—
Out-of-Town Companies.				
Bay State	50,000,000	50	1	1⅛
" Income Bonds	2,000,000	1,000	—	75
Binghampton Gas Works	450,000	100	—	65
" 1st Mtg. 5's	500,000	1,000	90	96
Boston United Gas Co.—				
1st Series S. F. Trust	7,000,000	1,000	82	85
2d " " "	3,000,000	1,000	47½	50
Buffalo City Gas Co.	5,500,000	100	5	8
Bonds, 5's	5,250,000	1,000	73	73½
Capital, Sacramento	500,000	50	—	35
Bonds (6's)	150,000	1,000	—	—
Chicago Gas Co. Guaranteed Gold Bonds	7,000,000	1,000	104	106¼
Cincinnati Gas and Electric Co.	29,500,000	100	92	93
Columbus (O.) Gas Co., 1st Mortgage Bonds	1,500,000	1,000	96	98
Columbus (O.) Gas Lt. & Heating Co.	1,682,750	100	90¼	91
Preferred	3,026,500	100	75¼	80
Consumers, Toronto	2,000,000	0	200	204
Consolidated, Baltimore	11,000,000	100	—	105
Mortgages, 6's	3,600,000	-	—	118
Chesapeake, 1st 6's	1,000,000	—	—	—
Equitable, 1st 6's	910,000	—	—	—
Consolidated, 1st 5's	1,490,000	—	—	112
Consolidated Gas Co. of N. J.	1,000,000	100	15	17
Con. Mtg. 5's	880,000	1,000	92	95
Bonds	75,000	—	—	100
Denver Gas and Electric	458,000	—	102	105
Detroit City Gas Co	5,000,000	50	—	50
" Prior Lien 5's	4,619,000	1,000	97	100½
Detroit Gas Co., 5's	381,000	1,000	75	80
Equitable Gas & Fuel Co., Chicago, Bonds	2,000,000	1,000	—	101
Essex and Hudson Gas Co.	6,500,000	—	39	40
Fort Wayne	2,000,000	—	—	—
" Bonds	2,000,000	—	55	—
Grand Rapids Gas Light Co., 1st Mtg. 5's	1,225,000	1,000	104½	105
Hartford	750,000	25	190	200
Hudson County Gas Co., of New Jersey	10,500,000	—	112	113½
" Bonds, 5's	10,500,000	—	103	103½
Indianapolis	2,000,000	—	60	70
" Bonds, 5's	2,650,000	—	104½	105
Jackson Gas Co.	250,000	50	82	—
" 1st Mtg. 5's	200,000	1,000	97	100
Kansas City Gas Light Co., of Missouri	5,000,000	100	—	36
Bonds, 1st 5's	3,822,000	1,000	102	104
Laclede Gas Co., St. Louis	10,000,000	100	104	105
Preferred	2,500,000	100	—	98
Bonds	10,000,000	1,000	104	—
Lafayette Gas Co., Ind.	1,000,000	100	—	60
Bonds	1,000,000	1,000	60	65
Louisville	2,570,000	50	143	145
Madison Gas and Electric Co.				
" 1st Mtg. 6's	350,000	1,000	106	106¾
" 6 per cent. scrip, due 1910	100,000	25	60	60½
Massachusetts Gas Companies, of Boston	25,000,000	100	82	82½
Preferred	25,000,000	100	95	95¾
Montreal Gas Co., Canada	2,000,000	100	218	218¾
Nashville Gas Light Co.	1,000,000	100	110	—
Newark, N. J., Con. Gas Co.	6,000,000	—	56	58
Bonds, 6's	6,000,000	—	127	128
New Haven Gas Co.	2,000,000	25	200	—
Peoples Gas Lt. & Coke Co., Chicago	25,000,000	100	114¼	114¾
1st Mortgage	20,100,000	1,000	—	—
2d "	2,500,000	1,000	104	—
Rochester Gas & Electric Co.	2,150,000	50	88	—
Preferred	2,150,000	50	118	—
Consolidated 5's	2,000,000	—	104¼	105½
San Francisco Gas Co., Cal.	15,500,000	—	—	—
St. Joseph Gas Co.—				
1st Mtg. 5's	751,000	1,000	100	102
St. Paul Gas Light o.	1,500,000	100	45	47
1st Mortgages, 6's	650,000	1,000	113	116
Extension, 6's	600,000	1,000	112½	115
General Mortgage, 5's	2,465,000	1,000	90	95
Syracuse Gas Co., N. Y.	1,975,000	100	50	55
Bonds	2,047,000	1,000	100	104
Washington (D. C.) Gas Co.	1,600,000	200	391	392
1st Mortgage, 6's	600,000	—	—	—
Western Gas Co., Milwaukee	4,000,000	—	—	—
Wilmington (Del.) Gas Co.	600,000	50	361	—

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SPECIAL MEETING.

OFFICE OF THE UNITED GAS IMPROVEMENT CO.,
N. W. CORNER BROAD AND ARCH STS.,
PHILADELPHIA, December 9, 1909.

A Special Meeting of the Stockholders of The United Gas Improvement Company will be held at the office of the Company, Northwest Corner of BROAD AND ARCH STREETS, PHILADELPHIA, on Wednesday, Feb. 9, 1910, at 12 o'clock, noon, for the purpose of acting upon the subject of a proposed increase in the authorized capital stock of the Company from 1,009,467 shares, of the par value of $50 each, to 1,110,414 shares, of the par value of $50 each.

By order of the Board of Directors.

W. F. DOUTHIRT, Secretary.

The stock transfer books will be closed from 3 P.M., Jan. 28, 1910, until 10 A.M., Feb. 10, 1910.

1801-9

DIVIDEND NOTICE.

OFFICE OF THE UNITED GAS IMPROVEMENT CO.,
N. W. CORNER BROAD AND ARCH STS.,
PHILADELPHIA, PA., Dec. 8, 1909.

The Directors have this day declared a quarterly dividend of 2 per cent. (one dollar per share), payable Jan. 15th, 1910, to stockholders of record at the close of business, Dec. 31, 1909. Checks will be mailed.

1801-5 LEWIS LILLIE, Treasurer.

DIVIDEND NOTICE.

AMERICAN LIGHT AND TRACTION CO.,
40 WALL ST., NEW YORK CITY, Jan. 4, 1910.

The Board of Directors this day declared from the net earnings of the Company the regular quarterly dividend of one and one-half per cent. (1½ per cent.) on the preferred stock of this Company, payable February 1, 1910, to stockholders of record of preferred stock at the close of business January 19, 1910. The Board also declared, from the undivided profits of the Company, the usual quarterly dividend of two per cent. (2 per cent.), on the common stock of the Company, payable February 1, 1910, to stockholders of record of Common Stock at the close of business January 19, 1910. The Board also declared, from the undivided profits of the Company, a dividend of two and one-half (2½) shares of common stock on every one hundred (100) shares of common stock outstanding, payable on or before February 15, 1910, to stockholders of record of common stock at the close of business January 19, 1910. The transfer books for both preferred and common stock will close January 19, 1910, at 3 o'clock P.M., and will reopen February 1, 1910, at 10 o'clock A.M.

1805-1 C. N. JELLIFFE, Secretary.

Position Wanted

By man 30 years old, now employed as manager of small plant in Wisconsin. Have had 12 years' experience in bookkeeping and accounting; 6 years in the gas business. Willing to go anywhere as head bookkeeper, assistant manager or superintendent in town of 25,000 or over after January 1st, 1910.

1803-3 Address, "MIDDLE," care this Journal.

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1805-4

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NEW BEDFORD GAS AND EDISON LIGHT COMPANY,

1796-tf NEW BEDFORD, MASS.

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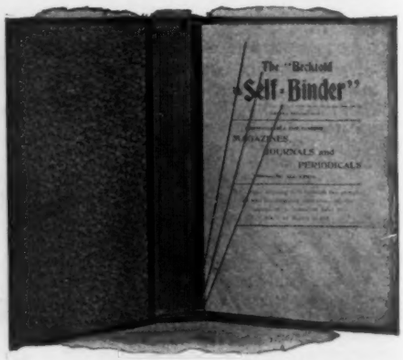

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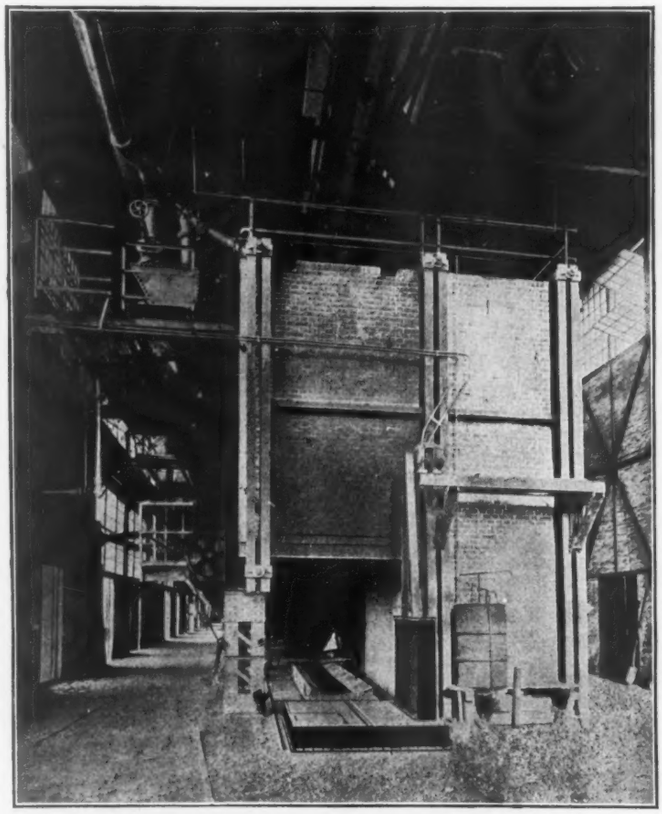

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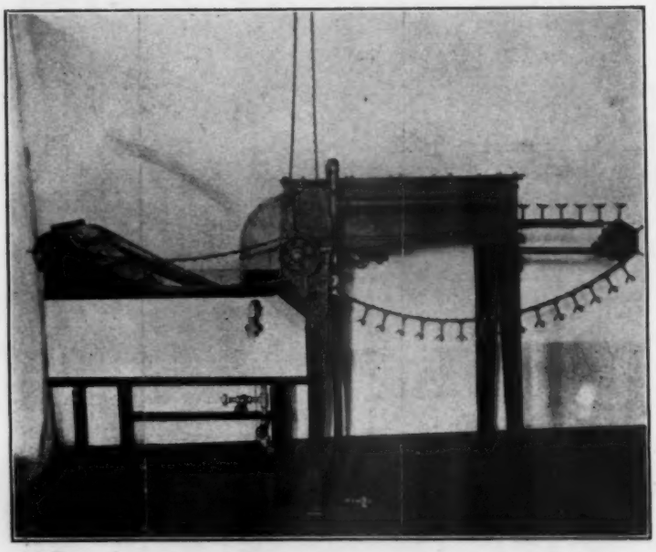

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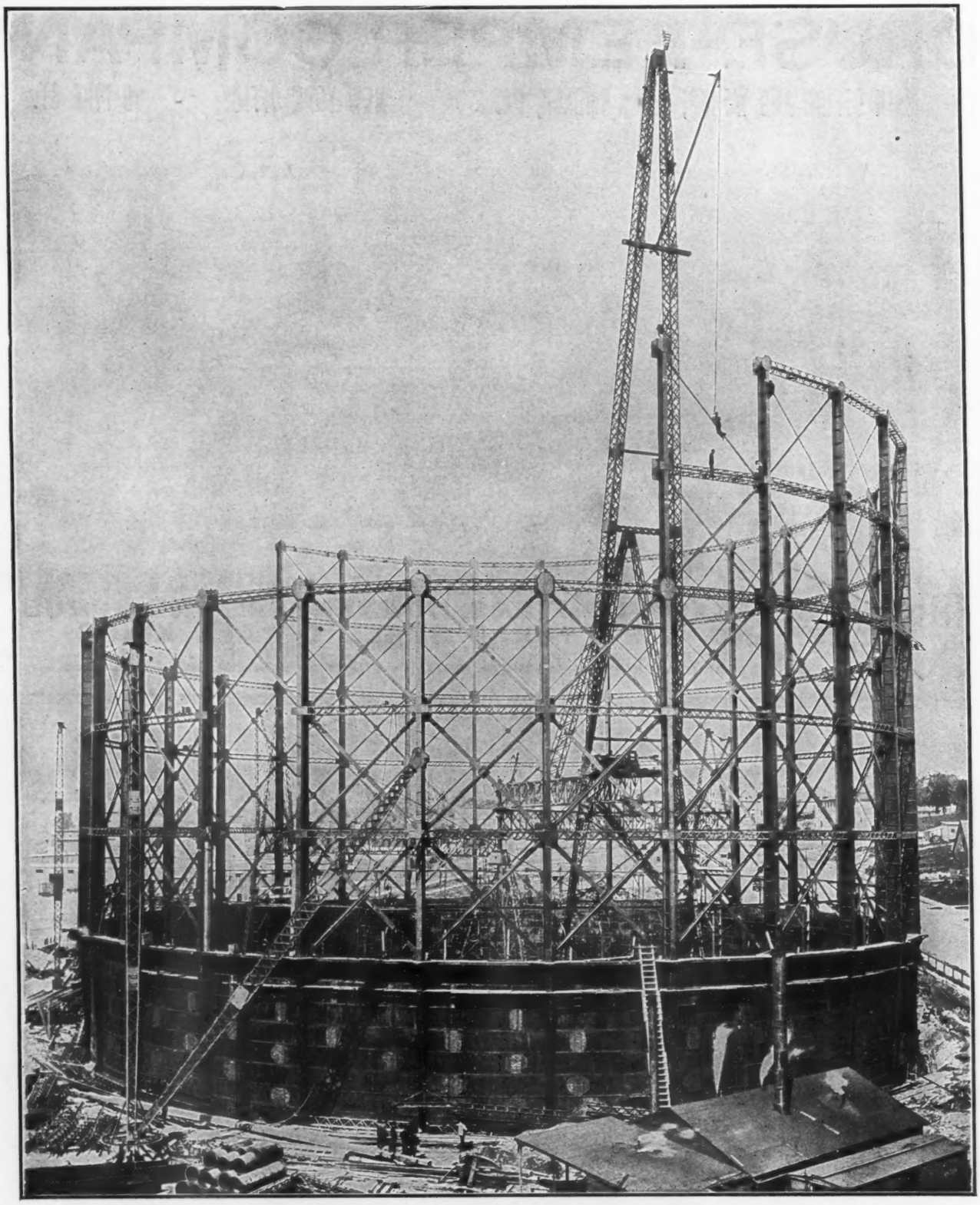

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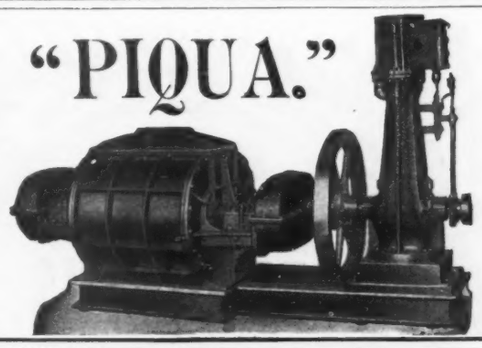

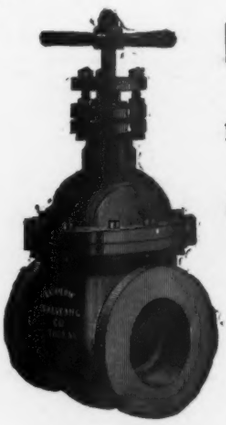

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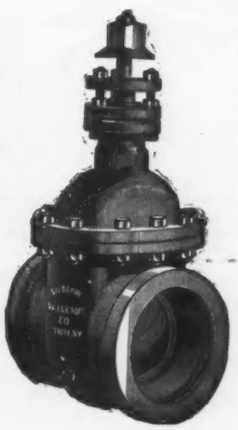

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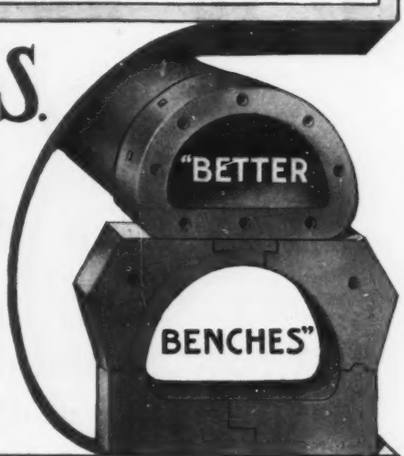

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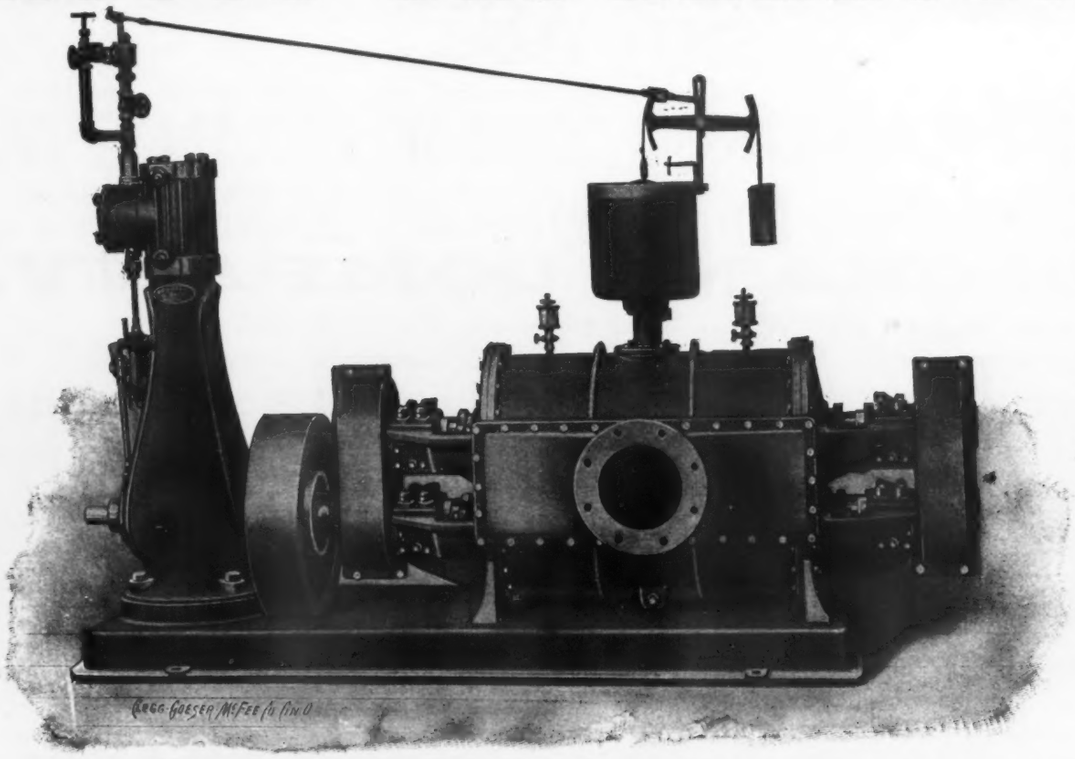

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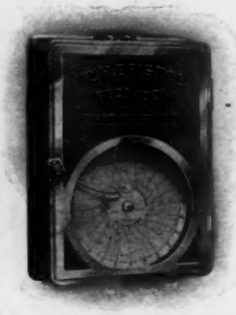

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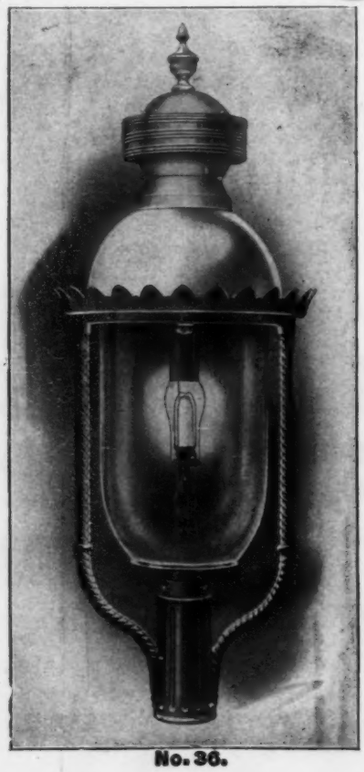

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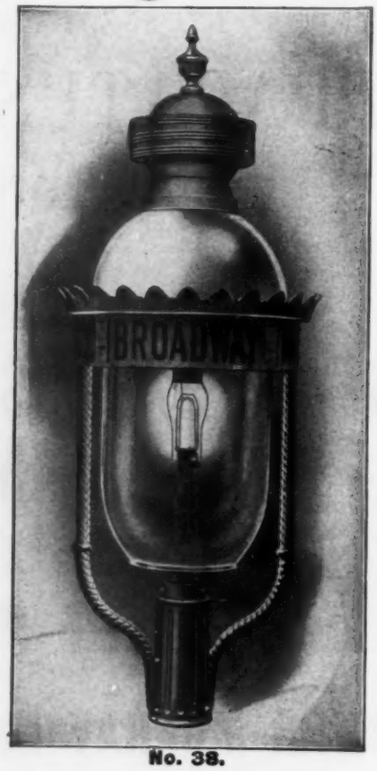

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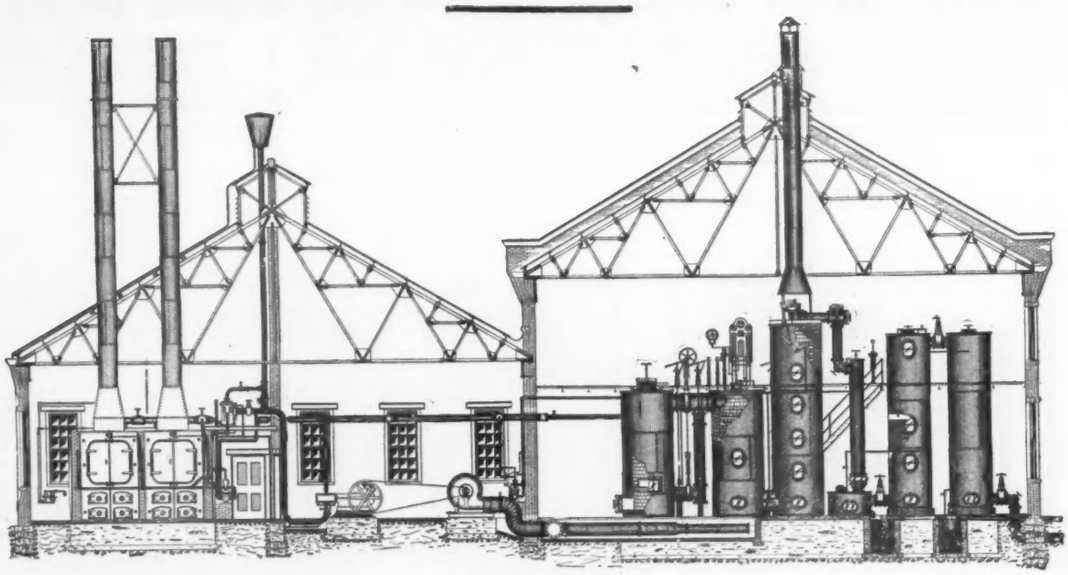

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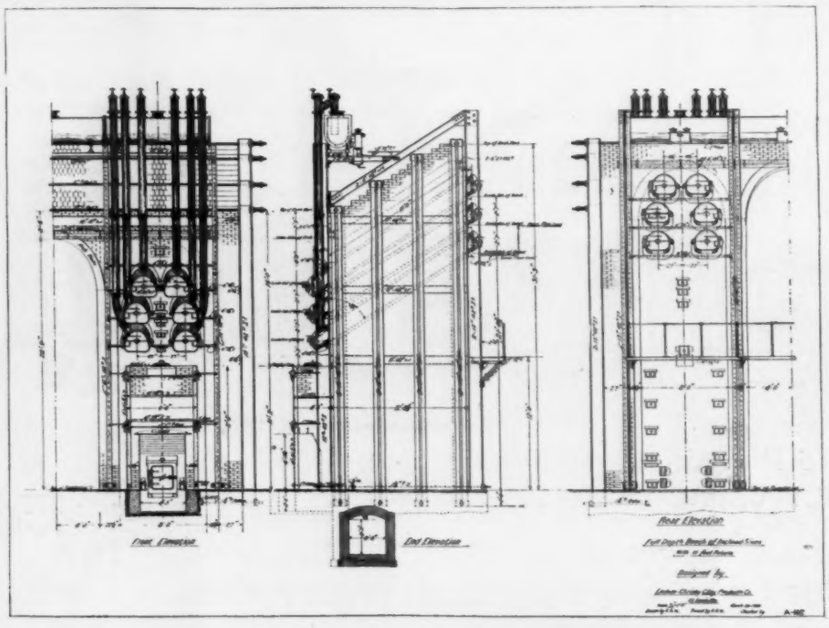

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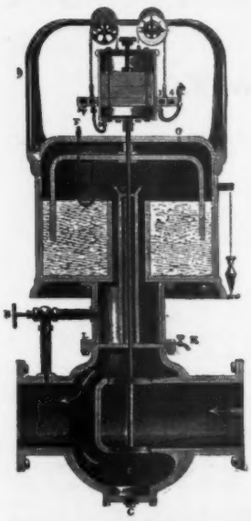

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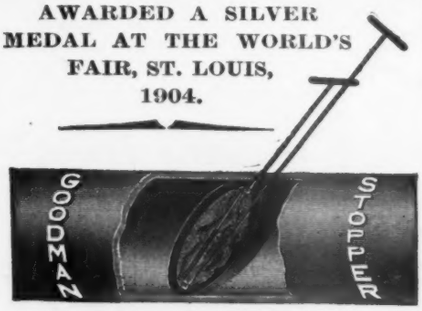

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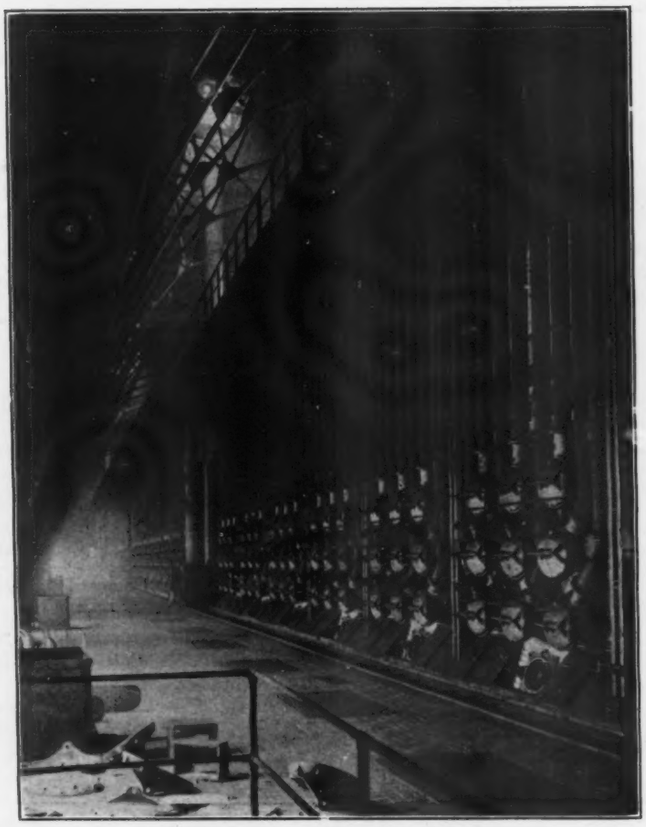

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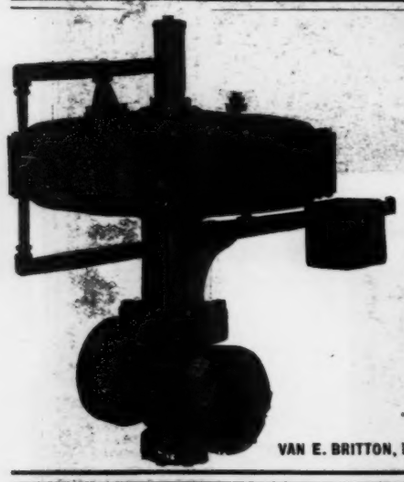

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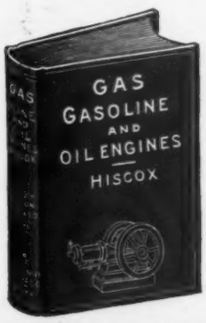

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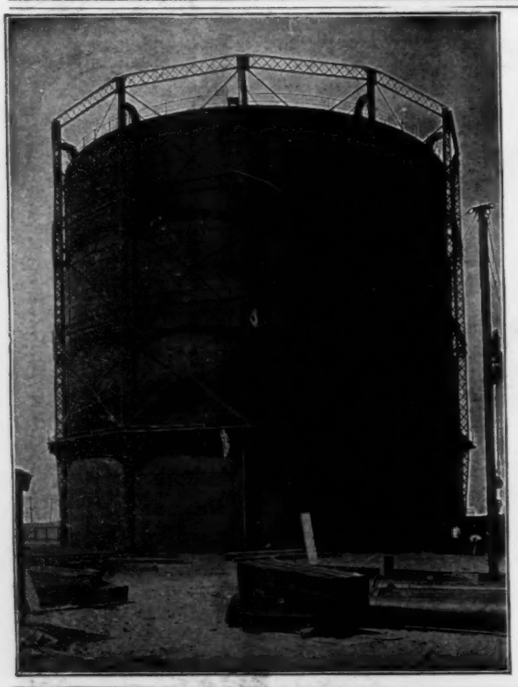

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